Deloitte.

Pharmaceutical production

Sector teaser

November 2020

Important notice:

Under this agreement, Deloitte does not express an expert opinion on information and data provided by the Client. Our work is not an audit and was not performed in accordance with audit or accounting standards and practices adopted in Kazakhstan or other jurisdictions, and therefore, it cannot be relied upon as if it had been performed in accordance with these standards and practices.

We have made every effort to perform a detailed analysis of all information provided by the Client and information freely available. At the same time, any audit and/or any independent review of the Initiator's financial and management reporting, and opinion on the quality and completeness of information received is outside of the agreed scope of work.

This Deloitte report is not an evaluation in accordance with local or international standards. Any value analysis, such as an NPV calculation and others presented in this report are provided solely for information purposes.

This document does not consider the probable impact of COVID-19 on sales, production, the supply chain or any other business aspect that may have a negative impact on the Company's performance. The recipient should take into consideration the most extensive impact of COVID-19 on the Company's financial position due to its negative impact on the Republic of Kazakhstan and the global economy and major financial markets.

Table of contents

Sector overview

- Code No. 360-VI dated 7 July 2020 *On Public Health and the Healthcare System* includes the term “medicines” and “medical goods”; the latter including groups of medical goods and medical technology.
- In the last five years, basic pharmaceutical production has grown annually by 9.6%, reaching US$ 242 million in 2019. Roughly 91% of pharmaceutical production is concentrated in Shymkent (84%) and Almaty Oblast (7%). Statistics agencies do not keep data on the production of medical goods.
- 85 companies currently produce pharmaceuticals in Kazakhstan, of which 49 producer medicines, 27 - medical goods and 9 - medical technology.
- Pharmaceutical production has immense potential for further development. State support against the backdrop of demand for medicines and the introduction of new standards and laws aiding sector modernisation are key in increasing production capacity growth for Kazakhstan businesses, helping reduce import dependence and increase exports.

Pharmaceutical sector growth

- According to Fitch Solutions, the Kazakhstan pharmaceutical industry is the largest in Central Asia in absolute terms. The forecast between 2020 and 2024 is for it to grow annually (CAGR) by 12.3%.
- Pharmaceutical industry growth in Kazakhstan will be based on the implementation of an obligatory social medical insurance system and new medicine pricing policy. The implementation of a comprehensive plan to develop the pharmaceutical and medicine industry in 2020–2025 should lead to production and medicine export levels doubling.

Import substitution/export potential

- Domestic medicine production accounted for 22% of the total in 2019, which is lower than the forecast of 30% to ensure state national security.
- The share of domestic production of medical goods is even lower – 10%. For example, Kazakhstan imports syringes, antibiotics and provitamins.
- In addition, the country is import dependent with respect to medicines containing insulin, human vaccines, cotton wool, gauze, bandages and other medical goods. At the same time, respiratory, circulation, urinary tract and endocrine disease and pregnancy complications are the most common medical problems in Kazakhstan.
- Moderate deficits and import dependence are prevalent in the medicine and pharmaceutical production industry. Medical and dental instruments and accessories, along with the production of therapeutic devices, artificial limbs and production of orthopaedic devices all have export potential.

State support

- The production of pharmaceutical and medical goods are recognised as priority sectors eligible for state support such as within the framework of the Entrepreneurial Code, the conclusion of long-term supply contracts with SK-Pharmatsiya LLP, SEZ operations and others.

Research area

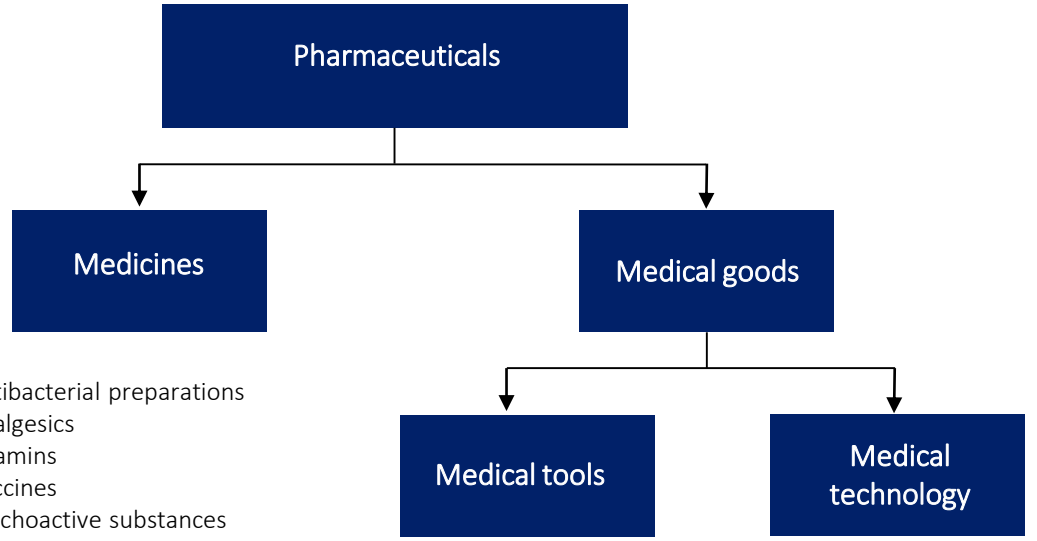
Definition

1. **Medicines** – a medicinal preparation in the form of a medicine, i.e. a remedy representing or containing a substance or combination of substances entering into contact with the human body, and used to treat or prevent human illness or restore, correct or change the physiological functions of the illness through pharmacological, immunological or metabolic treatment, or to diagnose illness and a person's condition.

2. **Medical goods** – medical tools and medical technology.

Medical tools are materials, items, solutions, reagents and sets used to provide medical aid in accordance with their functional purpose and manufacturer's instructions. Medical technology is apparatus, devices, equipment, sets and systems used separately or in conjunction to provide medical aid in accordance with their functional purpose and operating characteristics as established by the manufacturer.

Mechanism



- Antibacterial preparations
- Analgesics
- Vitamins
- Vaccines
- Psychoactive substances
- Anticoagulants
- Preparations to treat eye, nose and throat problems
- Preparations to treat urological problems
- Anti-inflammatories and others

A group of disposable medical goods

For example, syringes, disposable blood transfusion systems, catheters, dressings, suture materials and others

A group of medical goods used a number of times and with a long service life

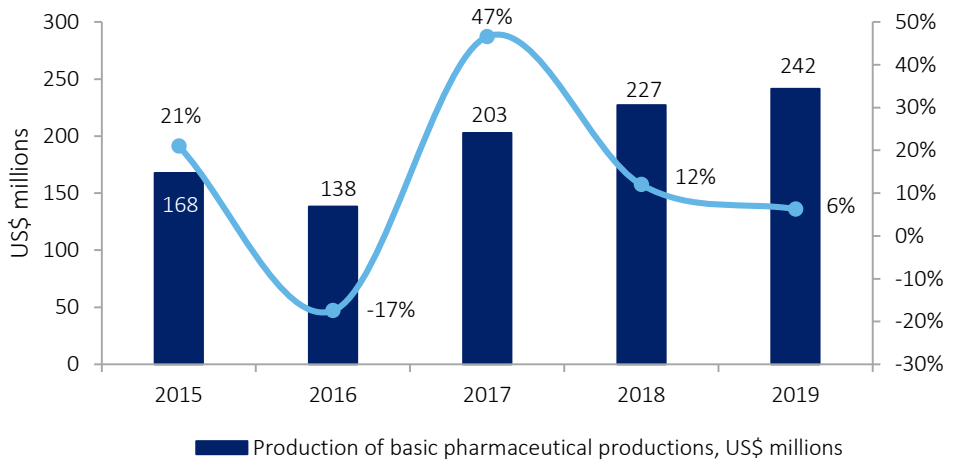
For example: x-ray machines, computer tomography systems, ultrasound scanners, electrophysiological systems and others

Source: Kazakhstan Code № 360–VI dated 7 July 2020 On Public Health and the Healthcare System, open sources

Pharmaceutical production in Kazakhstan

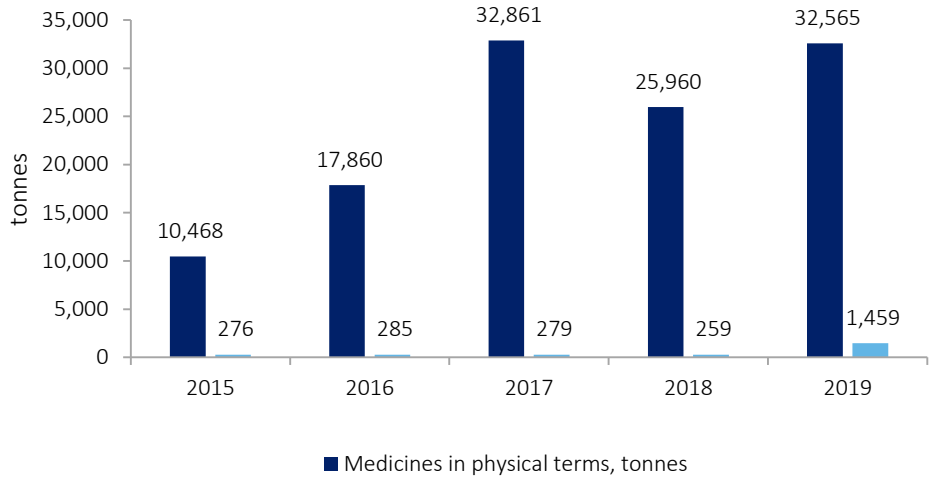
Medicine and pharmaceutical production

Changes in the production of basic pharmaceuticals in Kazakhstan in monetary terms, US$ million



Average pharmaceutical production in Kazakhstan in the last 5 years amounted to US$ 196 million. It increased between 2017 and 2019 (CAGR 9.2%) due to the launch of new industrialisation projects and increases in ID procurements from DM. A total of 41 projects are currently operational, creating over 5 thousand jobs, expanding the sales market for Kazakhstan pharmaceuticals to Russia, Mongolia and Kyrgyzstan.
As such, ID procurements increased from KZT 25.4 billion to KZT 58.9 billion between 2016 and 2020 H1. At the same time, the majority of procurements from DM were based on long-term 10-year supply contracts rather than tenders.

Changes in the production of basic pharmaceuticals in Kazakhstan in physical terms, tonnes



In physical terms, pharmaceutical production in Kazakhstan was 24,454,787 kg in the last 5 years, and in general has been increasing, despite a decline in 2018, which was not the same for production in monetary terms.
Medicines made up the dominant share of pharmaceuticals – 98%, in the last 5 years. Nevertheless, production of various pharmaceuticals in 2019 increased 5-fold year-on-year.

Source: Kazakhstan Statistics Committee

Medicine and pharmaceutical types. Availability of raw materials

Changes in and structure of medicine and pharmaceutical production in Kazakhstan in physical terms, kg

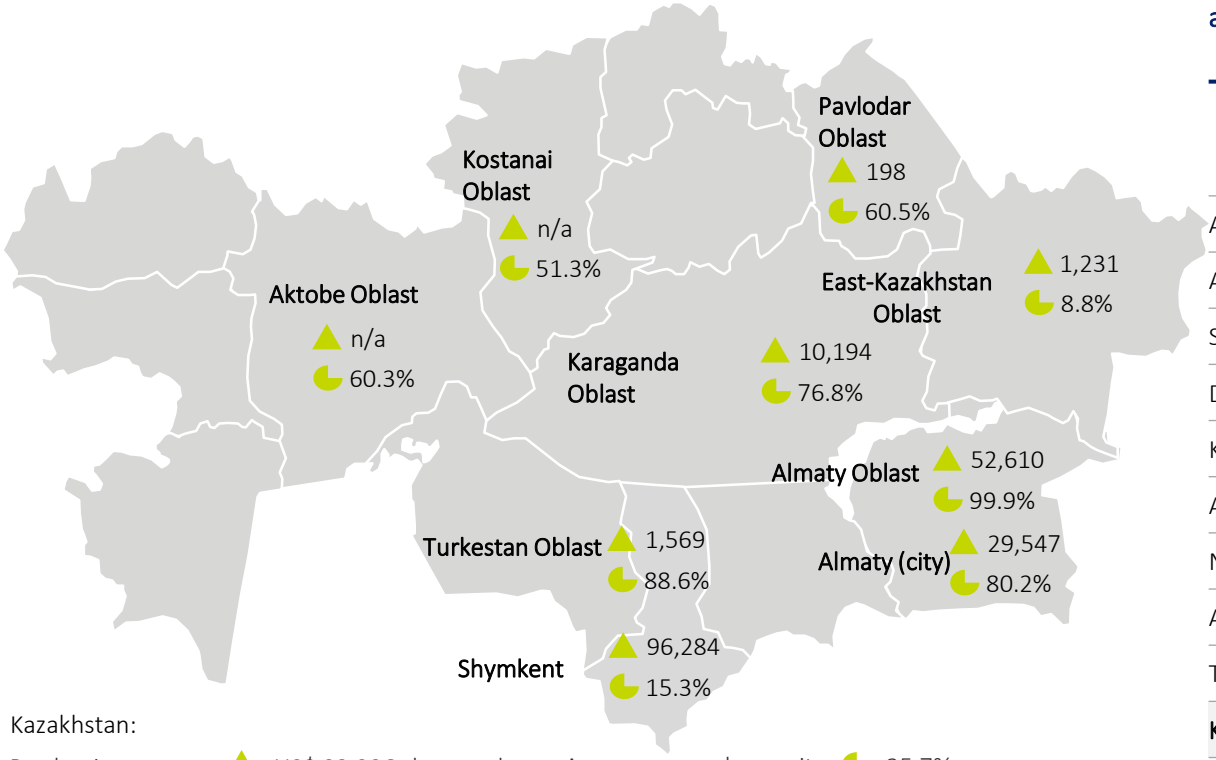
	2015	2016	2017	2018	2019
Medicines	6,665,125	11,330,081	20,648,624	16,300,045	x*
Various pharmaceuticals	130,329	161,842	165,659	126,665	x*
Provitamins, vitamins and hormones; glycosides, vegetable alkaloids, saline versions; antibiotics	6,927	8,850	59,447	12,886	12,988
Lactones not included in other groups; heteronuclear compounds with nuclear nitrogens containing an uncondensed pyrasol circle, pyramid circle, piperazine circle	1,243	3,469	7,832	10,058	5,901
Lysin, glutaminic acid and saline solutions; quaternary sales and ammonium hydroxide; phosphoaminolipid; amides, their derivatives and salts	x*	1,771	2,047	5,806	3,766
Salicylic acid, acetosalic acid; their salts and complex ethers	621	1,821	2,146	8,370	2,931

- Medicines account for 97% of pharmaceuticals in the last 4 years. Medicine production increased 2.5-fold in 2018 compared to 2015. various pharmaceuticals make up the remaining 2%. However, the production of various pharmaceuticals has declined 1.2-fold.
- The production levels of various pharmaceuticals in the above list are insignificant, but production growth is on the rise. As such, protovitamin, vitamin and hormone production levels have increased 1.8-fold, lactone production has increased 4.7-fold, lysin production – 2.1-fold, and salicylic acid production – 4.7-fold. On the whole, production of all basic pharmaceuticals is on the rise. Data on medicine and other pharmaceutical production in 2019 is not available (x*). The same is true for lysin, glutaminic acid and salts in 2015.
- Kazakhstan produces medicines predominantly from substances (raw materials) purchased overseas due to the lack of domestic production. In 2018, the Kazakhstan company JSC Nobel Almaty Pharmaceutical Plant announced its intention to launch its own substance production.

Source: Kazakhstan Statistics Committee

Regional medicine production

Medicine production in specialised facilities in 2018 across Kazakhstan, US$ thousands



Kazakhstan:

Production output ▲ US$ 93,296 thousand Average annual capacity ◔ 25.7%

Shymkent (84%) and Almaty Oblast (7%) are responsible for the majority of medicine production in monetary terms. The potential for increasing average annual capacity in East-Kazakhstan Oblast and Shymkent is 8.8% and 15.3%, respectively. 2019 data was not used because production levels for Shymkent, the country's largest medicine producer, were not published.

Source: Kazakhstan Statistics Committee, Kazakhstan Ministry of Health

Pharmaceutical and medicine companies producing medicines as at 1 January 2020

Oblast	total	private		public	
		city	rural	city	rural
Almaty (city)	24	20	0	4	0
Almaty	7	0	7	0	0
Shymkent	6	6	0	0	0
Dzhambul	3	1	1	0	1
Karaganda.	3	3	0	0	0
Akmolaобл.	2	2	0	0	0
North-Kazakhstan	2	1	1	0	0
Aktobe	1	1	0	0	0
Turkestan	1	0	1	0	0
Kazakhstan	**49**	**34**	**10**	**4**	**1**

The majority of medicines are produced in Almaty (city) – 24 companies, Almaty Oblast – 7 (rural) and Shymkent – 6. Those oblasts not listed have no registered medicine production.

Local producers

Medicine producers
Company name and location
Shymkent
JSC Khimpharm (Santo trademark)
ZERDE-PHITO LLP
Rauan Scientific Production Centre LLP
Pharmsintex-Zerde LLP
Zhan Daua Phart LLP
Akniet Pharmaceuticals LLP
Almaty (city)
JSC Nobel Almaty Pharmaceutical Plant
Abdi Ibrakhim Global Pharm LLP
Kefar Kenes Pharma LLP
PK Kyzylmai
Eikos-Pharm LLP
Almerek LLP
Viva Pharm LLP
Lekos LLP
DOSFARM LLP
Zhanapharm LLP
Almaty Oblast
Phitoleum LLP
Leovit LLP
Kelun – Kazpharm LLP
PFK Eleas LLP
Sultan LLP
Karaganda Oblast
Karaganda Pharmaceutical Plant LLP
JSC International Scientific and Production Holding “Phitokhimiya”
Aktobe (city)
TK Pharm Aktobe LLP

Producers of medical tools
Company name and location
Shymkent
Marai E7 Group LLP
Almaty (city)
Almerek LLP
KAZ-DIA-TEST LLP
Pharmaktiv LLP
REMI LLP
Almaty Oblast
Dolce–Pharm LLP
Aksel I A LLP
Atyrau Oblast
MEDSTAREXPORT LLP
Pavlodar (city)
Merusar I K LLP

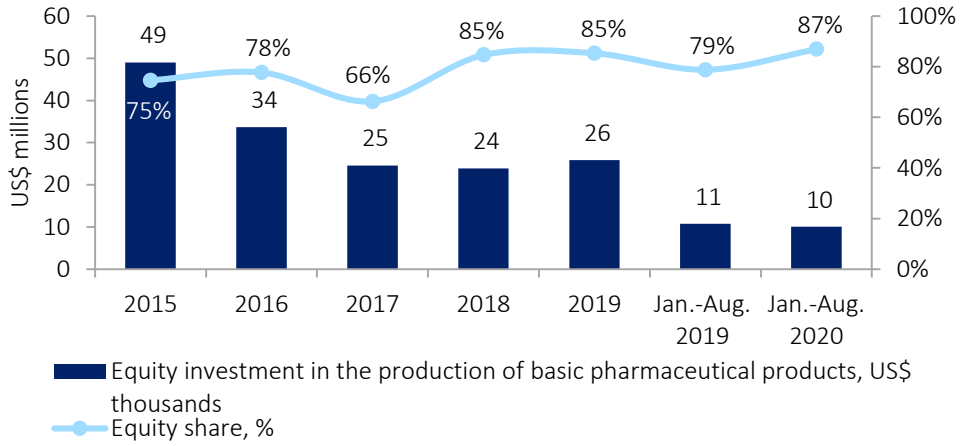
Producers of medical technology
Company name and location
Shymkent
Eko-Pharm LLP
Almaty (city)
Batys Medtechnika LLP
Almaty Oblast
Aksel I A LLP
Kumsuat Pharm LLP
Aktobe (city)
JSC Aktobrentgen
Atyrau Oblast
MEDSTAREXPORT LLP

Kazakhstan currently has 49 companies registered as producing medicines, 27 producing medical tools and 9 producing medical technology (Kazakhstan Ministry of Health). The tables above show those producers most commonly mentioned in open sources.
The majority of medical tool producers operate in Turkestan Oblast – 7 and Almaty (city) – 4. There are also 2 medical tool producers in each of Aktobe, Almaty, Pavlodar and North-Kazakhstan Oblasts as well as Shymkent. The majority of medical technology producers can be found in Shymkent – 4 and West-Kazakhstan Oblast – 2.

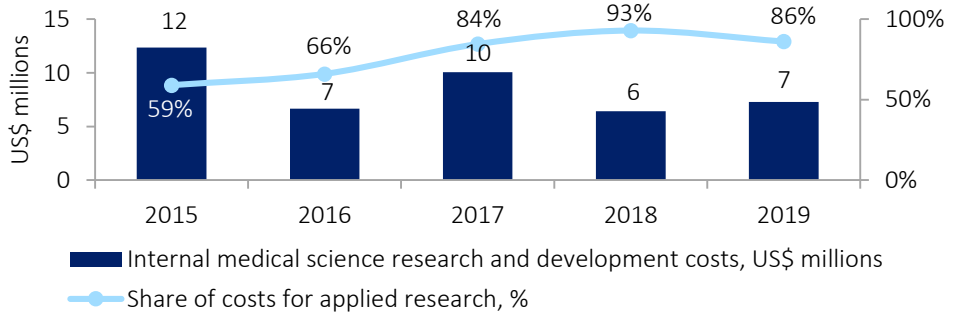
Source: open sources, company websites, Kazakhstan Ministry of Health

Equity investment, and research and development

Changes in equity investment in the basic pharmaceutical production industry, US$ millions



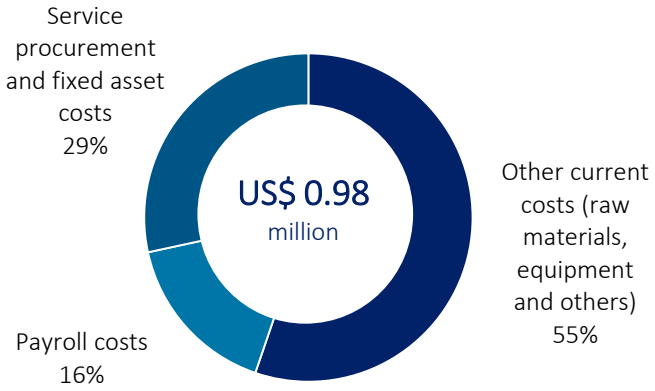
Changes in domestic medical science research and development costs, US$ millions



Source: Kazakhstan Statistics Committee

Equity investment in basic pharmaceuticals averages US$ 31 million. The average annual reduction in equity investment was 14.8%, which continued between January and August 2020. The main source of investment is pharmaceutical company equity: an average of 78% between 2015 and 2019. Pharmaceutical production is a high-tech process and for this reason, one of the most significant investment sources is overseas capital from international pharmaceutical companies, which can be used to increase research and development costs in Kazakhstan and provide access to new technology. According to the Kazakhstan Statistics Committee, average research and development investment in medical science is US$ 8.5 million, while investment in pharmaceutical production research and development was only US$ 0.98 million in 2019.

Structure of research and development costs in the production of basic pharmaceuticals in 2019, %



Human capital

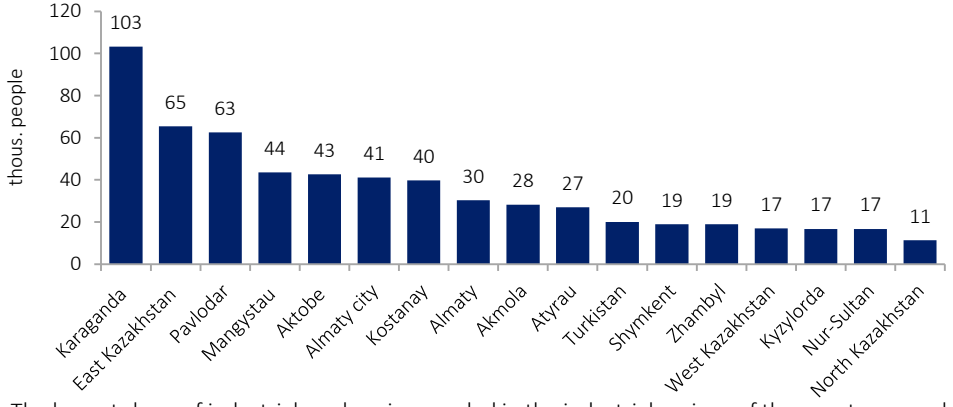
Labor force in the Republic of Kazakhstan

9.2 million people — In 2019

9.7 million people — in 2024

The labor force of the Republic of Kazakhstan at the age of 15 + is 9.2 million people (47% of the total). According to EIU forecasts, this figure will reach 9.7 million people by 2024.

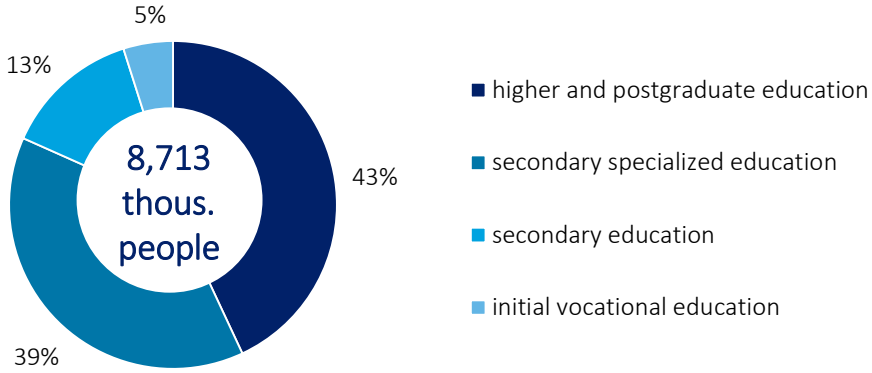
The actual number of industrial workers in the context of the III quarter, 2020



The largest share of industrial workers is recorded in the industrial regions of the country, namely: Karaganda Oblast – 17%, East Kazakhstan Oblast – 11% and Pavlodar Oblast – 10% of the total number of industrial workers.

Source: Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan, EIU

Distribution of the employed population by level of education as of the III quarter, 2020



The employed population by professions as of the III quarter, 2020

Name	Number, people	Share,%
Professionals	2,015,122	23%
Unskilled workers	1,518,492	17%
Service and sales workers	1,168,139	13%
Production equipment operators, assemblers and drivers	894,105	10%
Workers in industry, construction, transport and other related occupations	793,253	9%
Technicians and other auxiliary professional personnel	692,450	8%
Leaders and civil servants	580,040	7%
Farmers and workers in agriculture, forestry, fish farming and fishing	484,855	6%
Administration employees	470,544	5%
Workers not included in other groups	96,145	1%
Total	**8,713,145**	**100%**

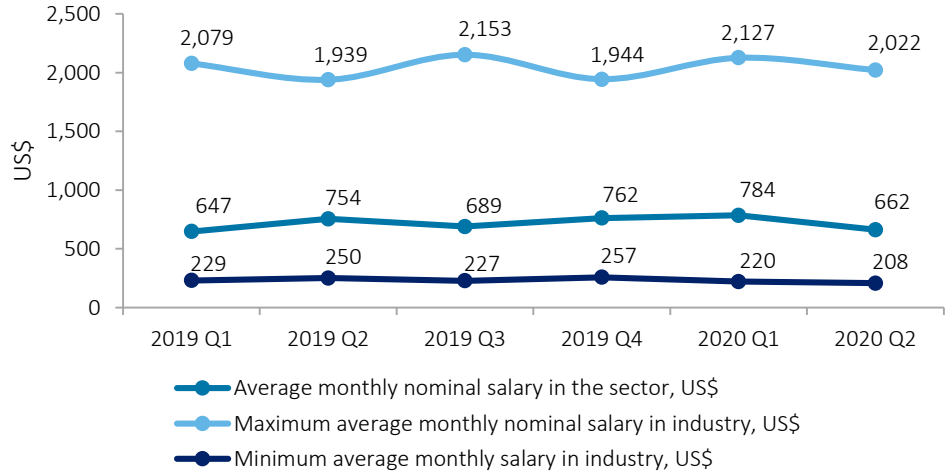
Human resources in the industry

Head count in basic pharmaceutical production in Kazakhstan in 2020 H2

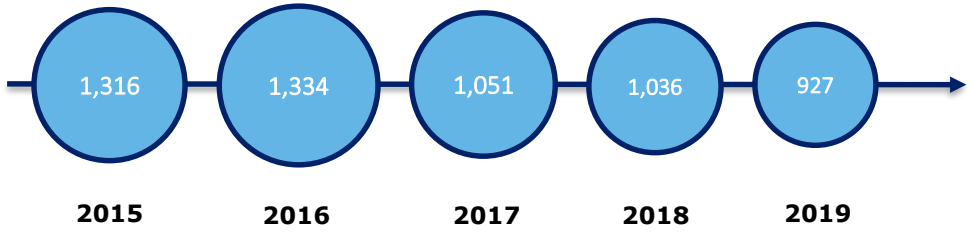
3.5
thousand persons

0.6%
share of industry

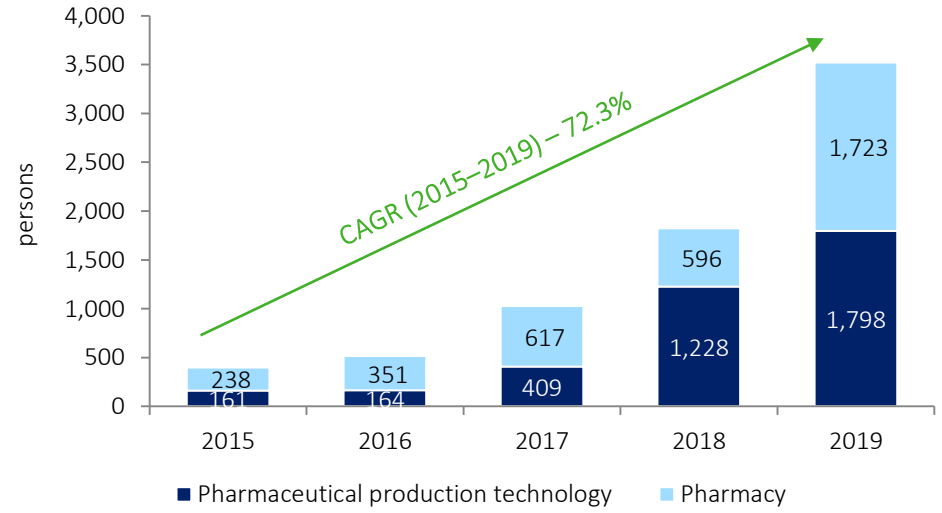
Average monthly salaries in pharmaceutical production in Kazakhstan, US$



Number of experts involved in medical science research and development in Kazakhstan



Total pharmacy and pharmaceutical production university day students at the start of the academic year, persons

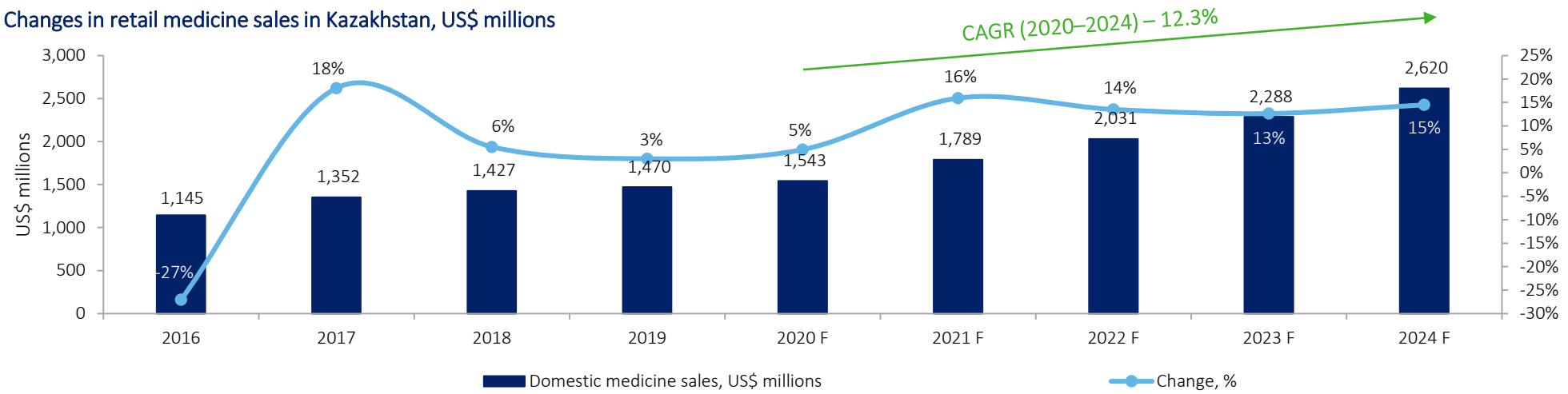


Source: Kazakhstan Statistics Committee

Pharmaceutical consumption in Kazakhstan

Local medicine market value and growth potential

Changes in retail medicine sales in Kazakhstan, US$ millions

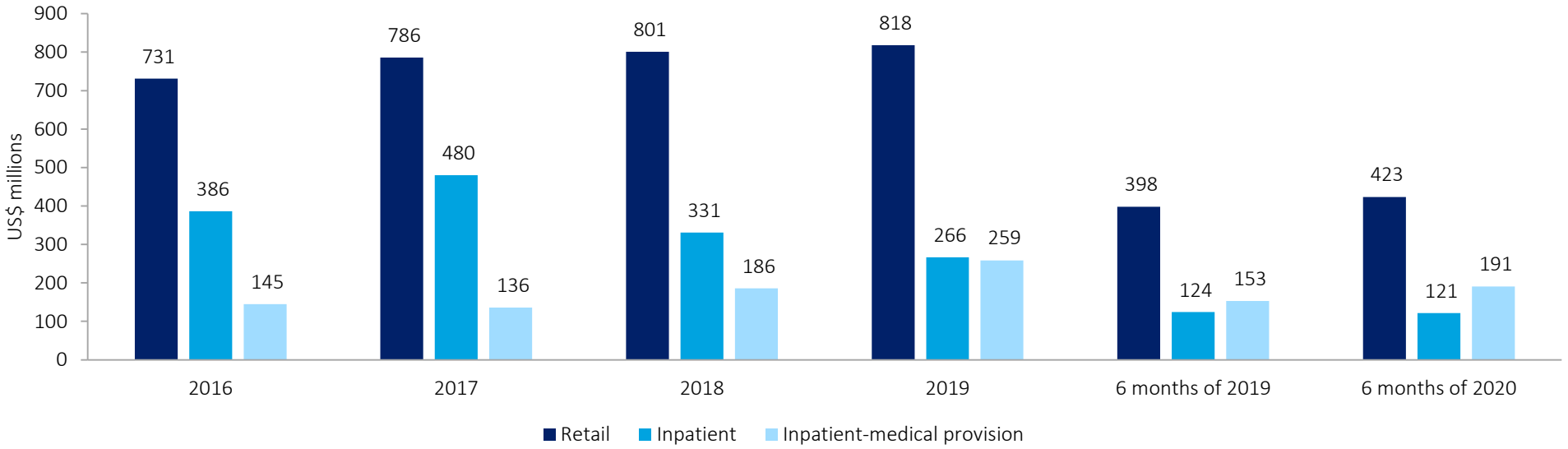


- According to Fitch Solutions, the Kazakhstan pharmaceutical industry is the largest market in Central Asia in absolute terms, registering US$ 1,470 million medicine sales in 2019. Outlook for medicine sales over the next 5 years is optimistic, forecasting that between 2020 and 2024, the market will register CAGR of 12.3%, achieving a market value of US$ 2,620 million in 2024.
- The Kazakhstan pharmaceutical market will grow thanks to the introduction of an obligatory social medical insurance system (Law No. 405-V dated 16 November 2015 *On Obligatory Social Medical Insurance*) and a new medicine pricing policy (Law No. 211–VI dated 28 December 2018 amending legislative acts regarding medicines and medical goods). Under the obligatory medical insurance system, the State commits to pay for treatment of socially significant diseases for everyone ("base package"). In addition, it will also contribute to an "insurance package" to cover outpatient and inpatient care, and more complex treatment for socially underprivileged sections of the community. Thus, a significant portion of healthcare costs will be the responsibility of the State, which will result in increased access to medical services for greater numbers of people and greater demand for medical services and medicines.
- The new pricing policy in Kazakhstan will be used to increase access to medicines by limiting wholesale and retail mark ups. In addition, to implement its Comprehensive Plan to Develop the Pharmaceutical and Medical Industry in 2020–2025, the State is planning to double medicine production.

Source: Fitch Solutions Kazakhstan Pharmaceuticals & Healthcare Report, 2020 Q4

Structure of local medicine market sales

Changes to and structure of medicine sales in Kazakhstan, US$ millions



According to IQVIA, roughly 58% of medicines are sold in Kazakhstan through retail pharmacies. Retail sales increased from US$ 731 million to US$ 818 million between 2016 and 2019. The average annual growth in retail sales was 3.8%. A positive trend was also recorded in 2020, with retail sales increasing 6.3% for the 6 months of 2020 compared to the same period in 2019.

Two other sales sectors are represented by medicine purchases through the GFMC programme. Outpatient medicine sales (free medicines received through pharmacies) have likewise increased similar to retail sales. However, inpatient medicine sales have fallen as consumption declined between 2016 and 2019 from US$ 386 million to US$ 266 million. In the 6 months of 2020, inpatient medicine use also dropped compared to the same period in 2019.

Source: IQVIA analytical reports, 2017 - 2020 H1

Structure of medicine consumption in Kazakhstan by type

Medicine group rating according to the ATC classification of the Kazakhstan retail market in 2019

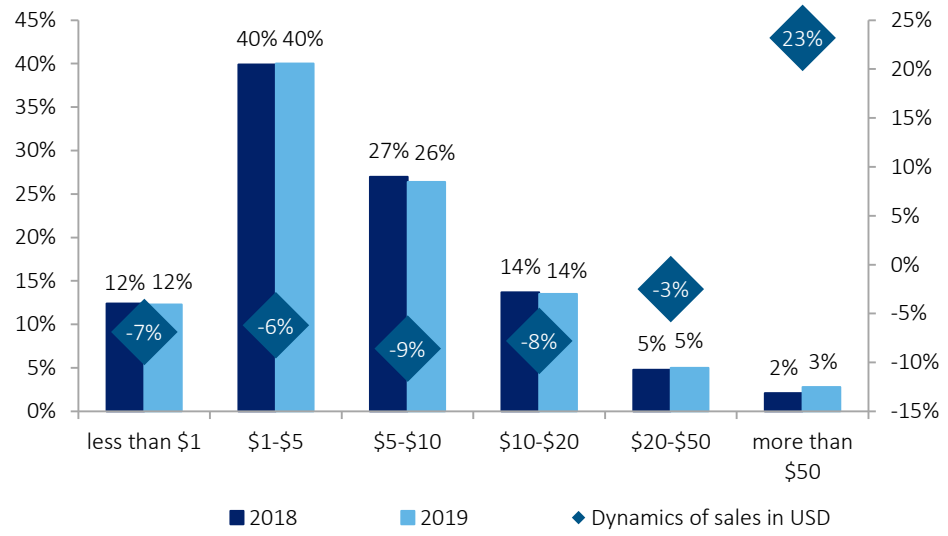
No.	Medicine group according to ATC classification	Market share in US$, %
1	JO1 Antibacterials for systemic use	9.7%
2	M01 Anti-inflammatory and anti-rheumatic products	5.5%
3	RO5 Cough and cold preparations	4.9%
4	NO2 Analgesics	4.4%
5	SO1 Opthalmologicals	3.4%
6	GO4 Urologicals	3.3%
7	CO9 Renin-angiotensin system preparations	3.1%
8	AO7 Antidiarrheals, intestinal anti-inflammatory/anti-infective agents	3.0%
9	GO3 Sex hormones and modulators of the genital system	2.8%
10	AO5 Bile and liver therapy	2.8%
11	A11 Vitamins	2.7%
12	RO1 Nasal preparations	2.4%
13	AO2 Preparations for acid-related disorders	2.3%
14	NO6 Psychoanaleptics	2.3%
15	BO1 Anticoagulants	2.0%

- Medicine usage is considered according to anatomic–therapeutic–chemical (ATC) classification. Medicine groups 1-14 register stable sales and are always in the top–15 groups in terms of sales.
- The main medicine group in terms of monetary and physical market share is J01 “Antibacterials for systemic use”. The group with the second highest market share in monetary terms (5.5%) included anti-inflammatory and anti-rheumatic products. Anti-inflammatory preparation consumption has grown, with most demand for cheaper preparations priced between US$ 1-5.
- The B01 “Anticoagulants” group only entered the top-15 in 2019, with consumption growing in all price segments. Likewise, demand for R05 “Cough and cold preparations” is also high with growth seen in all price segments.
- According to Fitch Solutions, the majority of preparations purchased in Kazakhstan in 2019 were prescription medicines and only 29% with no prescription. Generic products make up 42% of prescribed medicines, while patented preparations accounted for only 29%.

Source: Kazakhstan pharmaceutical journal “Kazakhstan Retail Medicine Market 2019”, Fitch Solutions

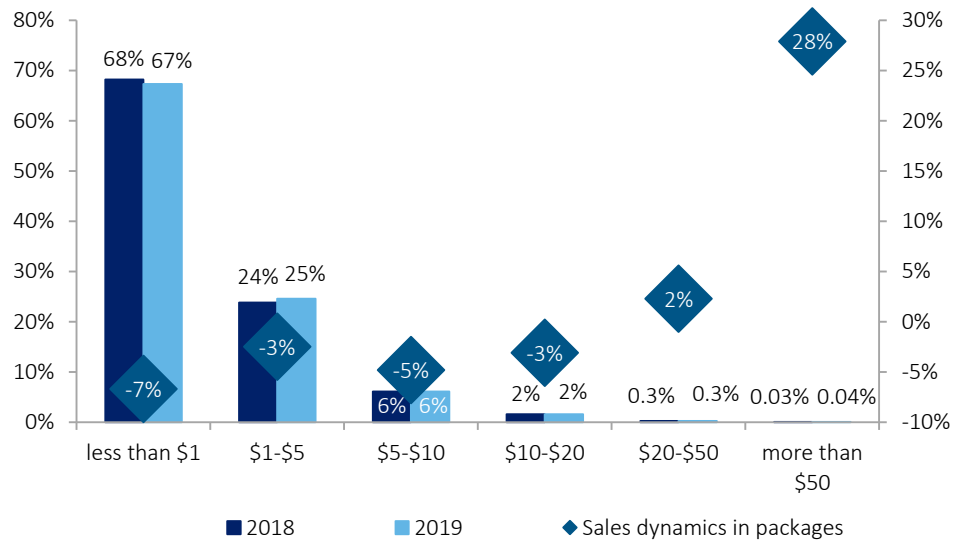
Medicine pricing consumption pattern in Kazakhstan

Pricing structure for the Kazakhstan retail medicine market in 2019, US$



The medicine pricing structure in Kazakhstan is non-uniform and is shown in the graph above.
The US$ 1-5 medicine segment accounts for 40% of the market in monetary terms, with more expensive segments taking a smaller market share. On the whole, pricing segments did not change significantly in 2018–2019. Sales dynamics were negative in the cheaper pricing segments. However, the segment for medicines over US$ 50 registered an increase due to sales of “Recormon”.

Pricing structure for the Kazakhstan wholesale medicine market in 2019, in packages



Preparations priced up to US$ 1 account for 67% of the market in physical terms.
More expensive price segments (US$ 20–50 and over) had a smaller market share. On the whole, price segment shares only changed insignificantly in 2018–2019.
Sales dynamics were negative in the cheaper price segments, while sales in the segment over US$ 20 increased in physical terms.
The conclusion is that the Kazakhstan public prefers cheaper medicines priced between US$ 1-10.

Source: Kazakhstan pharmaceutical journal “Kazakhstan Retail Medicine Market 2019”

Structure of medicine use within the framework of ID activities, by type

The Integrated Distributor has been responsible for purchasing all outpatient medicines since 1 January 2018. Costs to treat the top-10 nosology categories are US$ 94.58 million or 76% of total budget costs to provide outpatient medicines. The two top-10 lists of costs and patient numbers include nosology categories in both lists, specifically diabetes, oncology, chronic obstructive lung disease and mental disorders. Consequently, medicine production to treat these illnesses has potential in Kazakhstan.

Top-10 nosology categories by costs in 2020 H1

No.	Nosology	Costs, US$ millions	Share of total, %
1	Diabetes	22.04	18%
2	Oncology	17.32	14%
3	Inherited blood clotting diseases	12.06	10%
4	Hypertension	11.31	9%
5	Malignant lymphoid, haematogenic and tissue formations, including myelodysplastic syndrome	7.92	6%
6	Hunter's syndrome	6.38	5%
7	Mental illness	5.24	4%
8	Rheumatoid arthritis	4.33	3%
9	Ischemic heart disease	4.07	3%
10	Chronic obstructive lung disease	3.91	3%
	Top-10	**94.58**	**76%**
	Total	**124.17**	

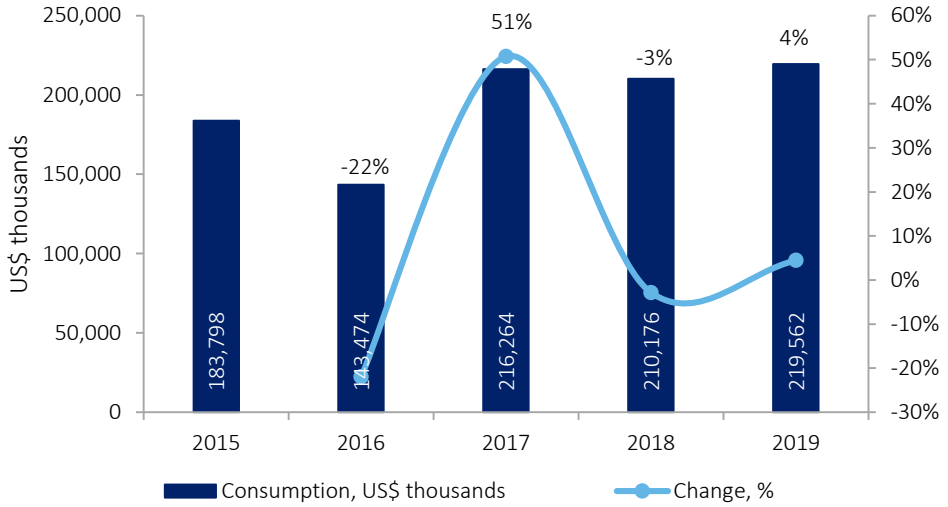
Top-10 nosology categories by patient numbers

No.	Nosology	Number of patients within the specific nosology	Share of total patients, %
1	Hypertension	837,396	38%
2	Ischemic heart disease	384,627	18%
3	Diabetes	283,353	13%
4	Chronic cardiac failure	84,888	4%
5	Hypothyroidism/Hyperthyroidism/Hypoparathyroidism	72,830	3%
6	Bronchial asthma	68,002	3%
7	Chronic obstructive lung disease	54,902	3%
8	Epilepsy	48,197	2%
9	Severe respiratory infection of the upper respiratory channel	44,575	2%
10	Mental illness	35,028	2%
	Top-10	**1,913,798**	**87%**
	Total	**2,189,864**	

Source: Integrated Distributor Report for 2020 H1

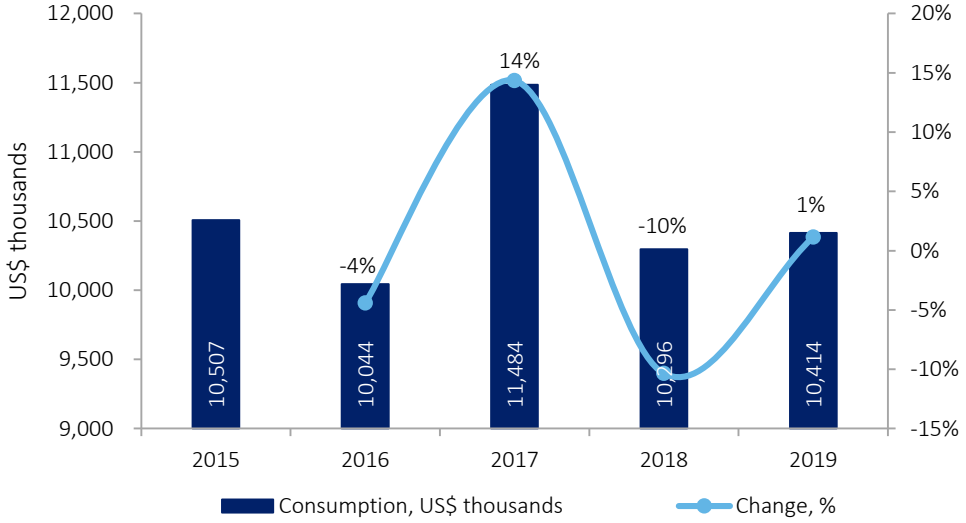
Size of the local medical goods' market

Use in Kazakhstan of devices and apparatus used in medicine, surgery, dentistry or veterinary work; other vision-testing electro-medical apparatus and devices, US$ thousands



As there is no data available on domestic medical technology production, usage was calculated as the difference between product imports and exports. Average medical technology use amounts to US$ 194,655 thousand. Changes in medical technology usage between 2017 and 2019 are similar to changes in medicine usage for the same period. The reason may be the increase in state investment in the sector. However, in 2017 the growth in medical technology usage was higher (51%) than for medicines (18%). The potential growth in medical technology use in Kazakhstan has not been studied.

Use in Kazakhstan of cotton wool, gauze, bandages and similar items in medicine, surgery, dentistry or veterinary work, US$ thousands



As there is no data available on domestic medical tool production, usage was calculated as the difference between product imports and exports. Average medical tool consumption is US$ 10,549 thousand. The consumption peak was in 2017 when it reached US$ 11,484 thousand or 14% growth compared to the previous year. The potential growth in medical tool usage in Kazakhstan has not been studied.

Source: Trademap.org

Morbidity in Kazakhstan by disease/illness class

Public morbidity by disease/illness class, per 100 000 persons

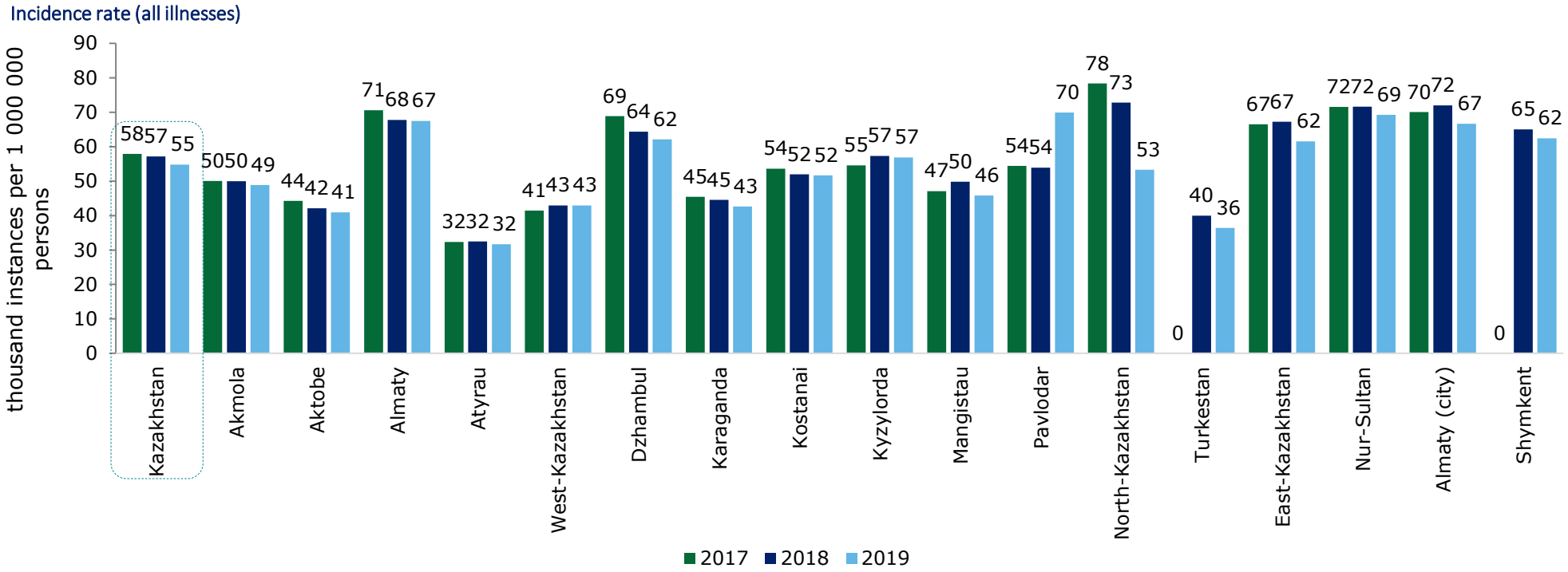
Index	2017	2018	2019	2019/2017
Respiratory disease	28,953	28,391	28,076	↓
Blood circulation disease	16,361	16,398	16,983	↑
Urinary tract disease	8,766	8,830	8,449	↓
Digestive disease	8,852	8,472	8,316	↓
Pregnancy complications	7,128	7,448	6,240	↓
Eye infections	6,064	6,013	5,761	↓
Musculoskeletal system disease	5,220	5,397	5,301	↑
Endocrine diseases	4,770	4,681	4,866	↑
Nervous system disease	4,610	4,453	4,407	↓
Skin disease	3,833	3,742	3,706	↓
Blood disease	4,038	3,540	3,403	↓
Consequences of external factors	3,423	3,002	2,942	↓
Tumours	2,129	2,252	2,333	↑
Ear infections	2,308	2,268	2,230	↓
Parasites	2,175	2,122	2,085	↓
Mental disorders	1,179	1,199	1,260	↑
Perinatal issues	1,540	1,297	1,246	↓
Birth abnormalities	1,070	986	951	↓
Mental issues related to psychoactive substance abuse	933	881	938	↑
Others	257	213	239	↓
All illnesses/diseases	**107,165**	**105,056**	**104,134**	↓

Source: Kazakhstan Ministry of Health

Morbidity levels

- In 2019, the number of registered diseases in the country was 19,278,994, 0.4% higher than in 2018. The 5 most common diseases or illnesses in Kazakhstan are respiratory, circulatory, digestive, urogenital diseases and pregnancy abnormalities.
- In 2019, in Kazakhstan respiratory diseases accounted for 27% of all diseases or 28,076 cases per 100 thousand persons. Respiratory diseases most commonly affect children up to 15 years of age and are 1.3 times more common in cities than in rural areas. By oblast, the majority of cases are recorded in Almaty, Pavlodar and Kostanai oblasts.
- In turn, circulatory disease accounted for 16% of all cases and has the highest fatality rate. Circulatory disease, which tends to affect people over 18 years of age, grew 7%. Cardiovascular disease is frequently seen in the cities of Almaty and Shymkent and in East-Kazakhstan Oblast.
- The increase in morbidity in 2017-2019 was caused by circulatory, musculoskeletal and endocrine disease, tumours and mental illness.
- Diabetes accounts for the greatest number of endocrine system disorders. Diabetes predominantly affects people aged over 18, and equally in city or rural inhabitants. Factors increasing the chances of diabetes include the hereditary risk, obesity, bad diet, chronic stress and others.
- The most dangerous tumours are malignant, specifically cancer tumours. Women tend to suffer from breast cancer and men from prostate and lung cancer.

Illness incidence rate



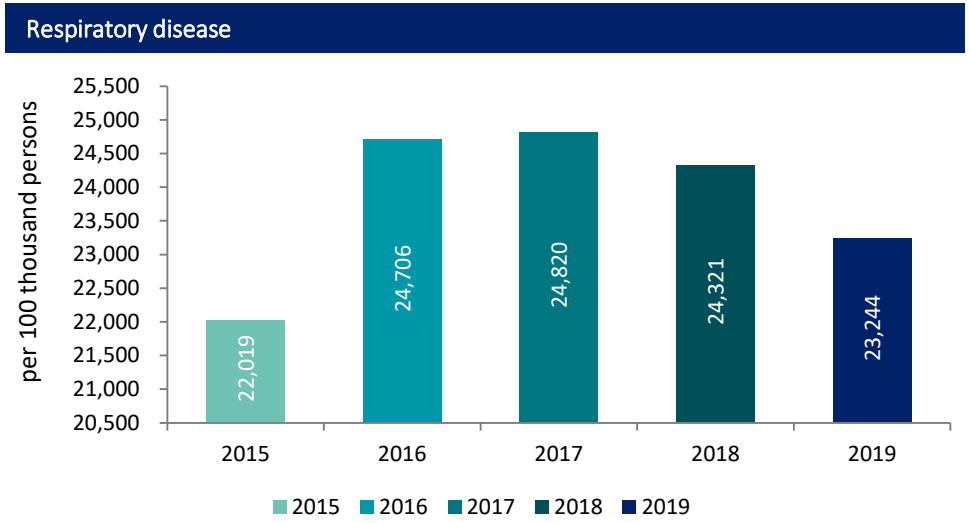
The highest illness incidence rates in Kazakhstan in 2019 were in Pavlodar Oblast (70 thousand illnesses per 100 thousand persons), Nur-Sultan (69 thousand), Almaty (city) (67 thousand) and Almaty Oblast (67 thousand). The lowest morbidity level was seen in Atyrau Oblast (32 thousand). The morbidity rate is dropping in all regions except for West-Kazakhstan, Kyzylorda and Pavlodar Oblasts.

The greatest share of illnesses registered were seen in the up to 15 and 15-17 age groups. At the same time, the highest numbers of illnesses for both age groups were registered in Pavlodar Oblast.

The incidence rate among the 18 and over age group is the lowest. The greatest number of illnesses in this group was registered in Nur-Sultan.

Source: Kazakhstan Ministry of Health

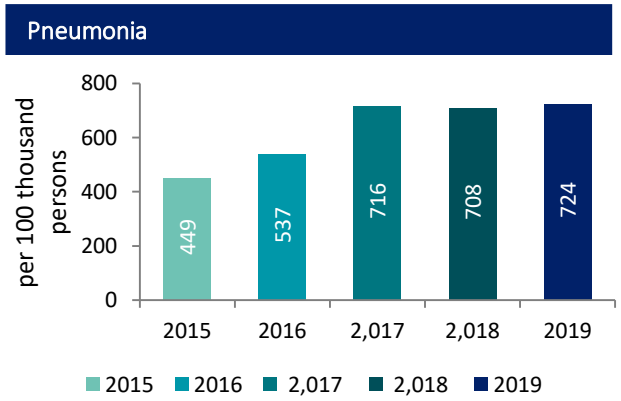
Respiratory disease

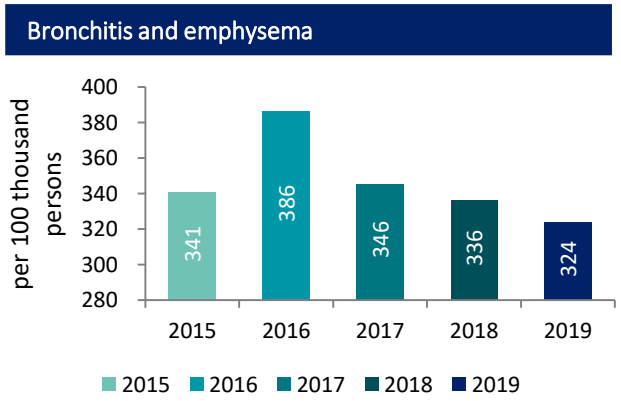


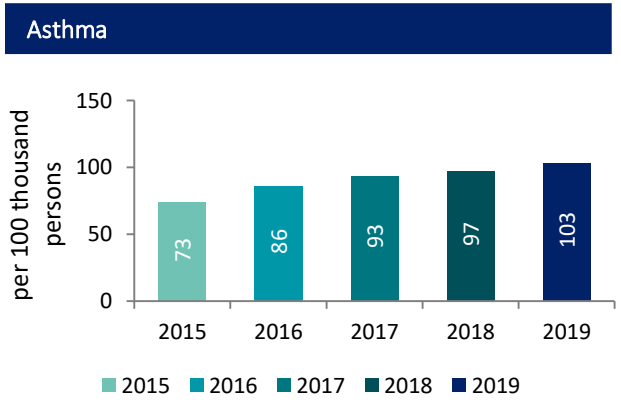
Respiratory diseases account for the largest share of all illnesses in the country. In 2015-2017, the respiratory morbidity level increased gradually. However, in 2018 it showed a 2% decrease nationwide and in 2019, a 4% decrease. Of all respiratory diseases, pneumonia, bronchitis and asthma are the most common.

Pneumonia is the most common, accounting for 724 cases per 100 thousand persons. In general, incidences of pneumonia have grown across the country, as they have for asthma – 103 cases per 100 thousand persons.

Cases of bronchitis and emphysema have declined to 103 cases per 100 thousand persons, which is 20% lower than the highest level recorded in 2016.



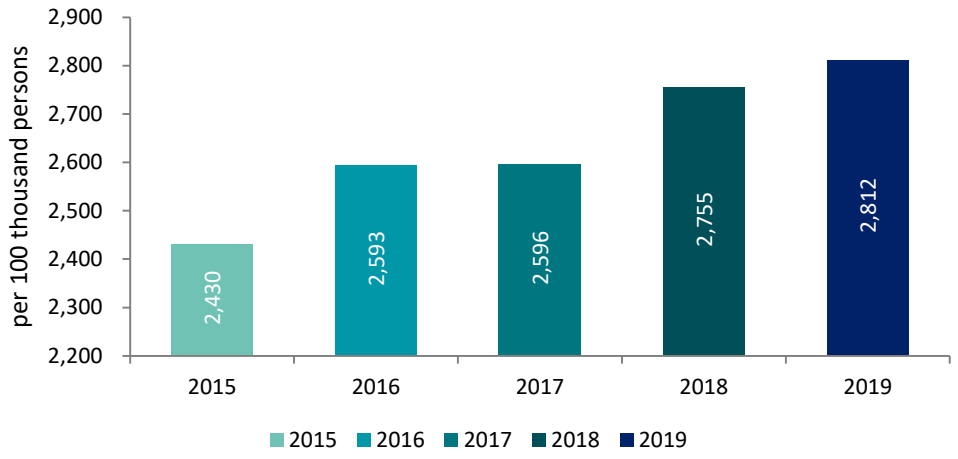




Source: Kazakhstan Ministry of Health

Circulatory disease (1/2)

Circulatory disease

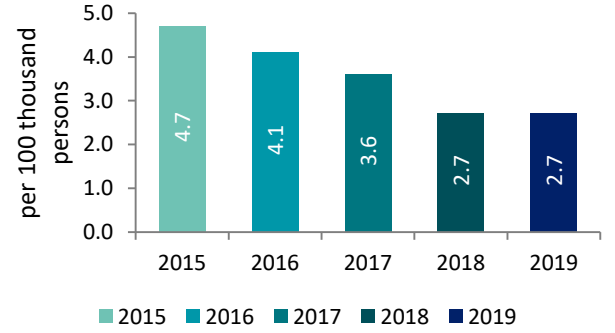


Circulatory disease (or cardiovascular disease) is the second most common in Kazakhstan. Cases are growing, although the morbidity level in 2019 declined significantly. The most common examples of circulatory disease are acute rheumatic fever, chronic rheumatic heart disease, arterial hypertension and others.

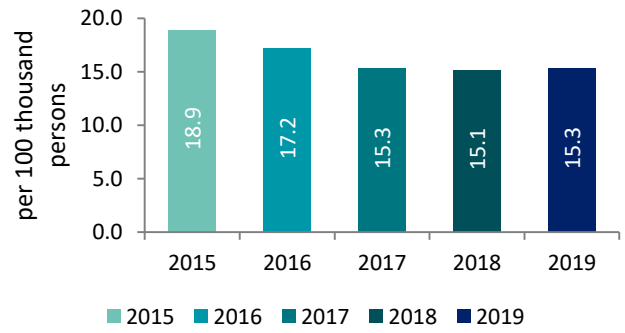
Cases of rheumatic heart disease (acute and chronic) are declining. The most common victims of this disease are children and teenagers.

Illnesses causing arterial hypertension are the most common and the number of cases grew significantly in 2015-2019 (CAGR-4%). The most common victims are adults.

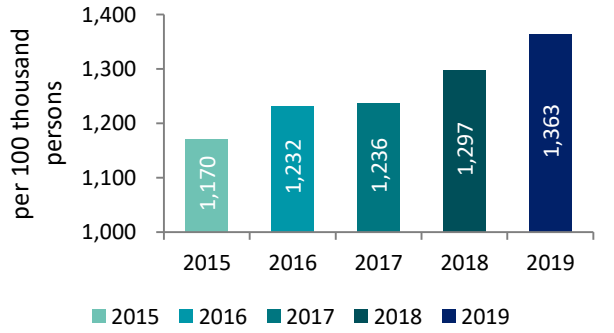
Acute rheumatic fever



Chronic rheumatic heart disease



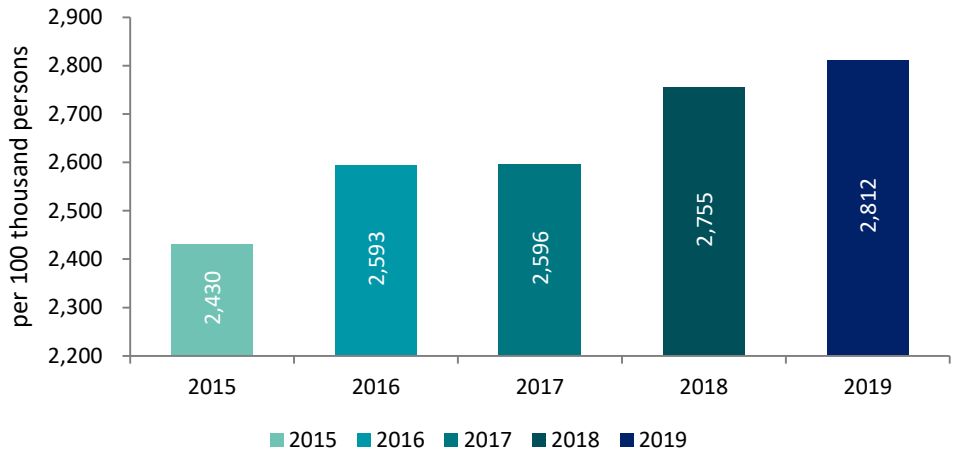
Arterial hypertension



Source: Kazakhstan Ministry of Health

Circulatory disease (2/2)

Circulatory disease



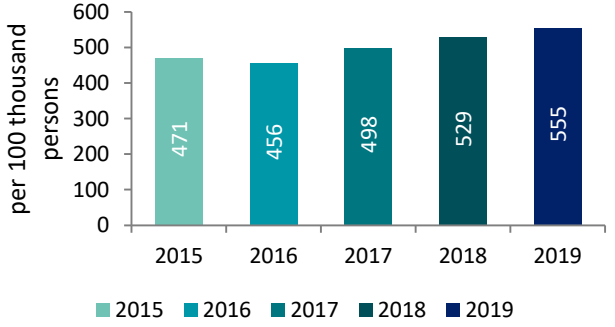
The main forms of other circulatory disease include:

- ischemic heart disease
- acute myocardial infarction
- cerebrovascular disease

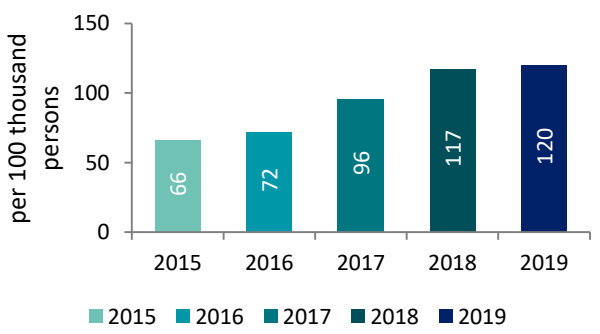
It tends to affect people over the age of 18. Cases of ischemic heart disease are stable and growing at 4% per year, with an average of 502 cases per 100 thousand persons per year.

Cases of acute myocardial infarction and cerebrovascular disease are also growing.

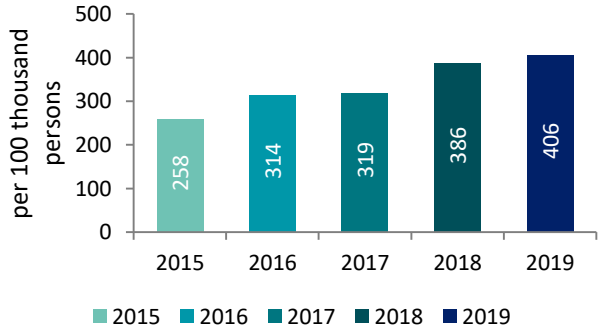
Ischemic heart disease



Acute myocardial infarction



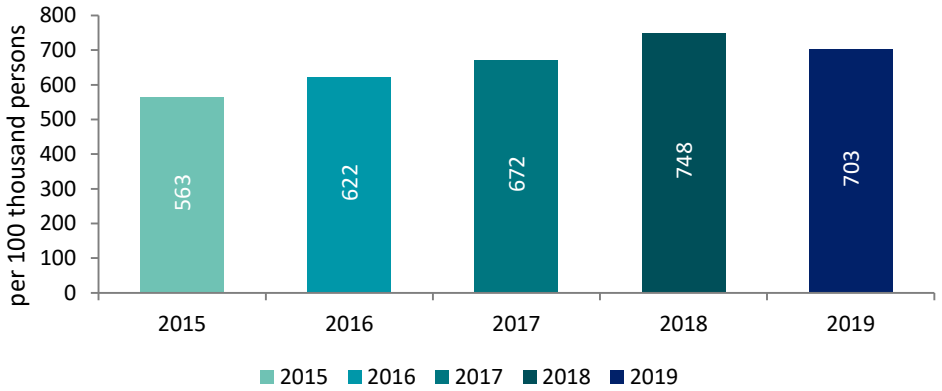
Cerebrovascular disease



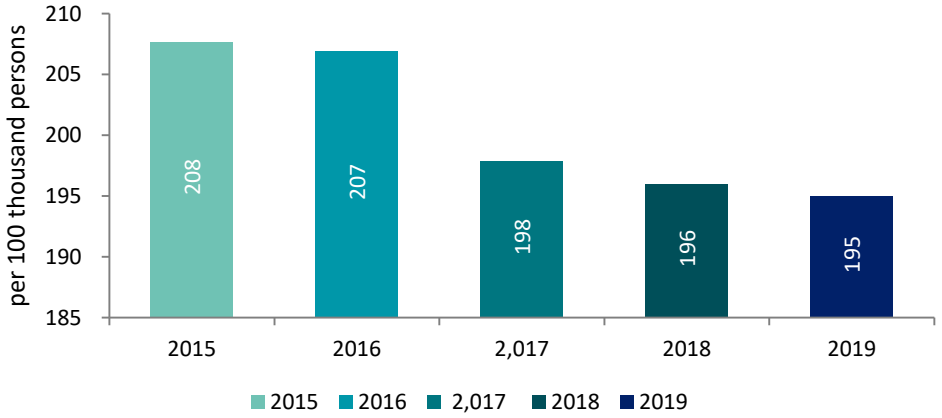
Source: Kazakhstan Ministry of Health

Tumours

Tumour cases



Malignant tumour cases



Source: Kazakhstan Ministry of Health

Tumour cases in Kazakhstan are stable and growing at an annual average of 5.69%. The average number of cases is 662 per 100 thousand persons, with most cases affecting people aged over 18 and living in cities.

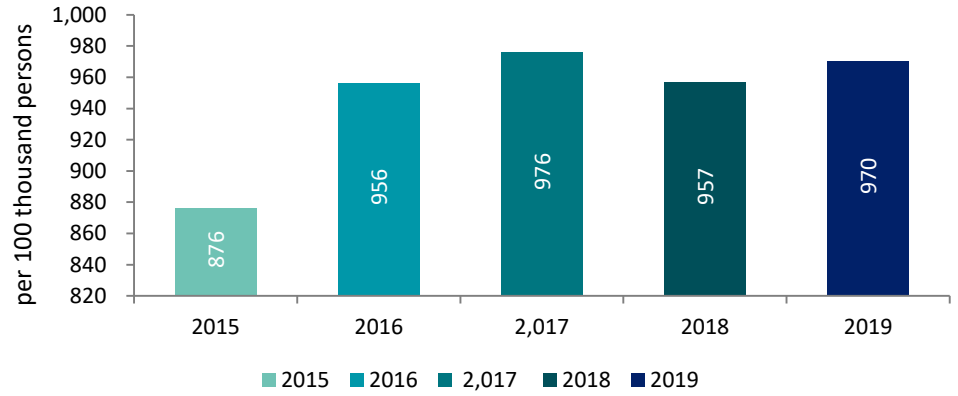
However, cases of malignant tumours have been dropping by an average of 1.59% per year. The highest numbers of cases of malignant tumours are in the north of the country, in North-Kazakhstan, Pavlodar and Kostanai Oblasts. The lowest numbers of cases are registered in the south of the country, in Turkestan, Kyzylorda and Dzhambul Oblasts and the city of Shymkent.

The most common and fatal types of malignant tumours in absolute terms are breast, respiratory (bronchial and lung) and skin cancers, followed by stomach, cervical and digestive system cancers.

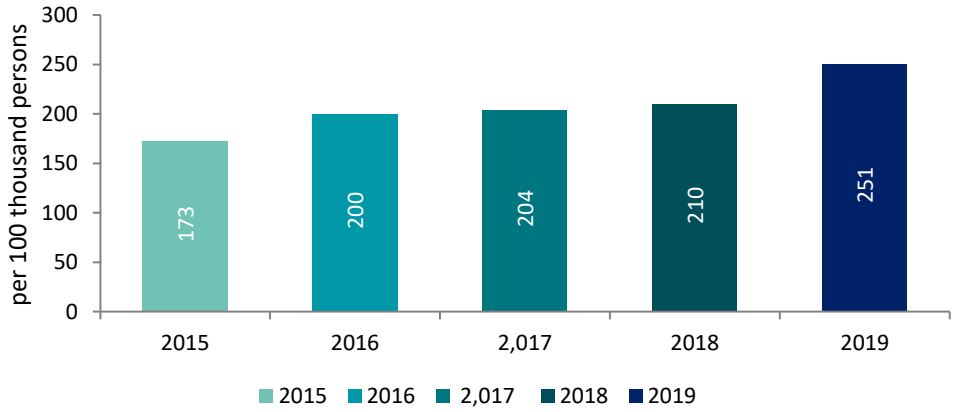
83.7% of all patients with malignant tumours were in stages I-II-III of their illness and 11.9% - in stage IV. Cancer of the trachea, bronchia and lungs accounted for the greatest number of stage IV cases – 26.3%, followed by stomach cancer – 19.9% and bowel cancer – 11.2%. On the whole, the majority of malignant tumours are stopped during stages I-II-III.

Endocrine disease

Endocrine disease



Diabetes



Source: Kazakhstan Ministry of Health

Endocrine gland disease levels have grown significantly in recent years. The average number of cases in Kazakhstan in 2019 was 947 per 100 thousand persons, which is average annual growth of 2.58%.

One of the most common endocrine illnesses is diabetes. Cases stood at 251 per 100 thousand persons in 2019. Growth in the number of cases in 2015–2019 was 9.75%.

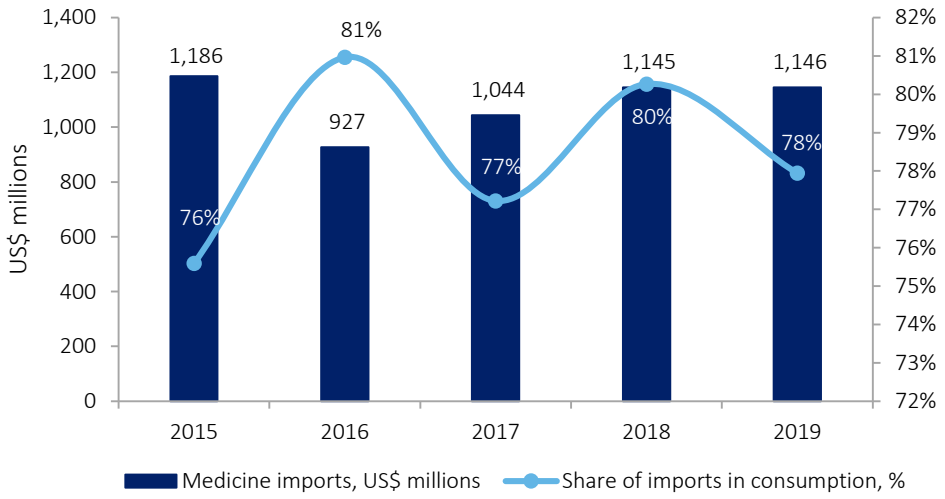
The main factors leading to endocrine disease are:

- gland tissue swelling;
- cysts;
- infection;
- hereditary factors;
- chronic illness in other organs and systems;
- cardiovascular collapse;
- surgical intervention;
- medicines taken and others

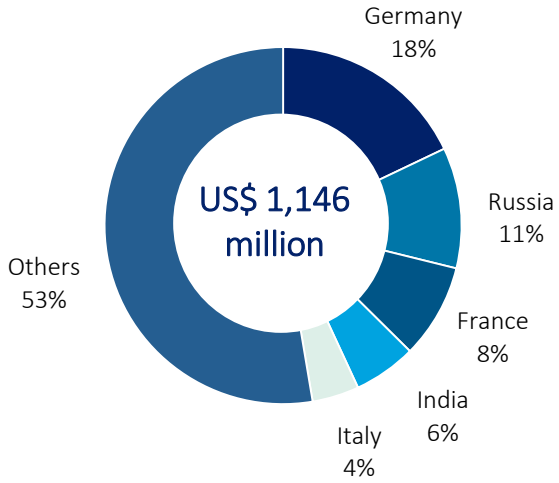
Pharmaceutical imports into Kazakhstan

Medicine imports into Kazakhstan

Changes in medicine imports into Kazakhstan, US$ millions



Structure of medicine imports into Kazakhstan in 2019, US$, %



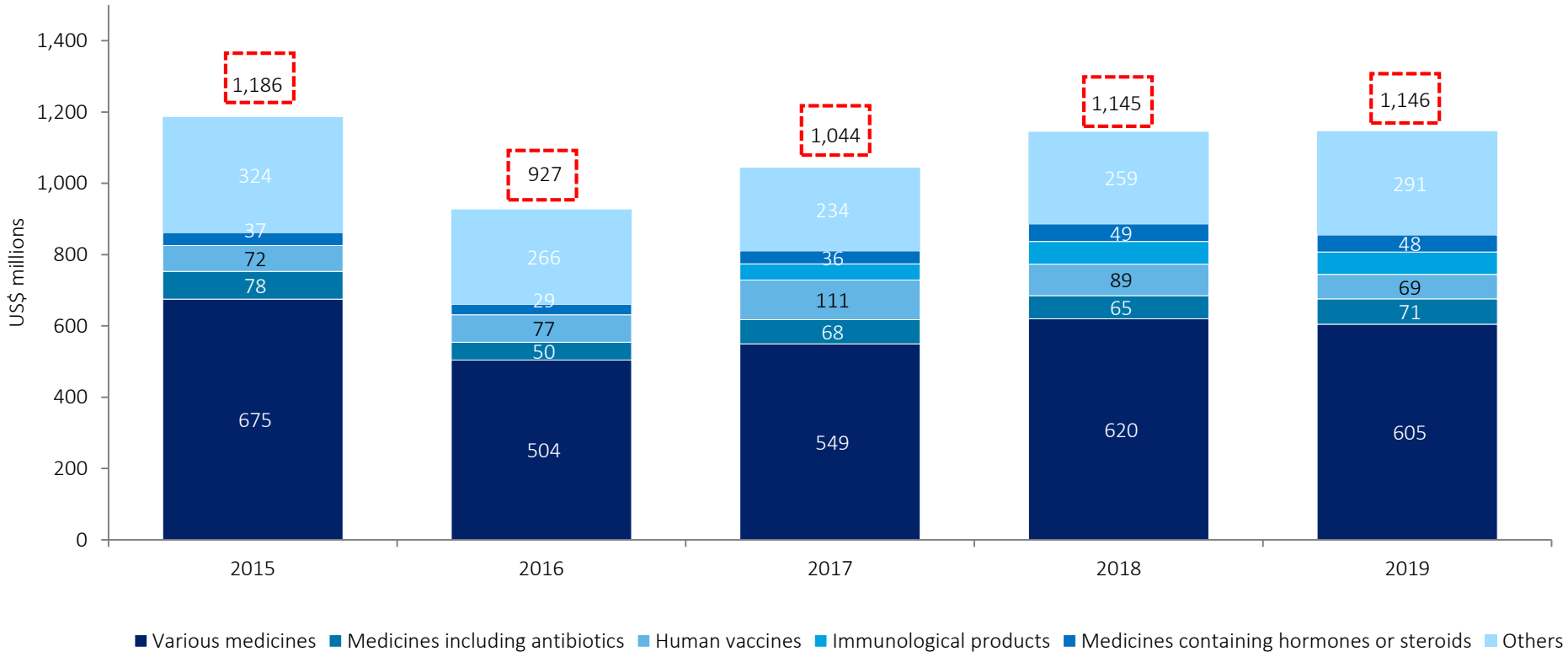
Kazakhstan is greatly dependent on medicine imports, despite the recent government policy to increase local production.
As such, average medicine imports amounted to US$ 1,090 million in the last 5 years, with imports accounting for 78% of consumption.
According to Fitch Solutions, dependence on imported medicines in Kazakhstan will remain for the next few years. It also predicts an increase in medicine imports into the country to US$ 1,604 million in 2024.

The top-5 exporters of medicines to Kazakhstan generate 47% of all imports. Germany creates the greatest share of that amount in monetary terms – 18%. The main German medicine suppliers and manufacturers are Bayer, Sandoz, Berlin–Chemie, STADA and others. The second largest medicine importer into Kazakhstan is Russia with 11%. The shares of all other countries are less than 10%. The third largest importer into Kazakhstan is India with 4%, with the most popular products coming from the company Dr. Reddy's Laboratories Ltd.

Source: Trademap.org, Fitch Solutions Kazakhstan Pharmaceuticals & Healthcare Report, Q4 2020

Structure of medicine imports into Kazakhstan

Changes to and the structure of the largest medicine imports into Kazakhstan, US$ millions



Source: Trademap.org

Main competitors – medicine importers

Rating of companies on the Kazakhstan retail medicine market in 2019

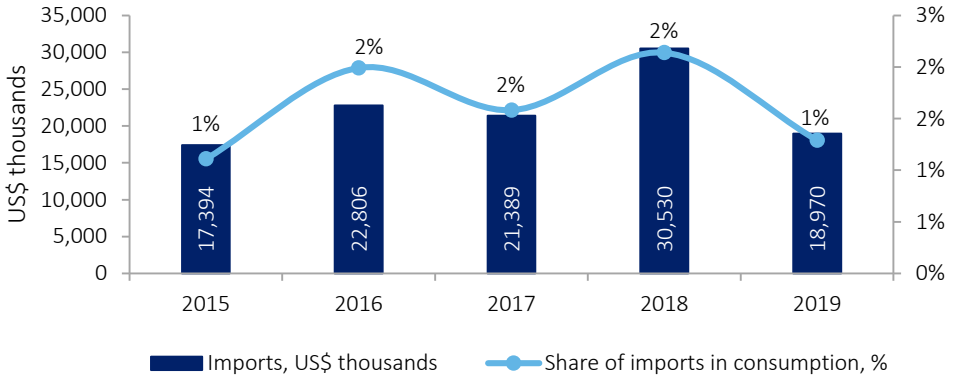
No.	Company	Market share, US$, %	Head office	Presence in Kazakhstan
1	Santo	5.2%	Warsaw, Poland	Production capacity
2	Sanofi–Aventis	4.0%	Paris, France	Representative office
3	Bayer	3.5%	Leverkusen, Germany	Representative office
4	Abbot	3.5%	Chicago, USA	Representative office
5	GlaxoSmithKline	3.5%	Brentford, UK	Representative office
6	Takeda	3.4%	Tokyo, Japan	Representative office
7	Teva	3.3%	Petah Tikva, Israel	Representative office
8	World Medicine	3.2%	London, UK	Representative office
9	Sandoz	3.0%	Holzkirchen, Germany	Representative office
10	Berlin–Chemie	2.8%	Berlin, Germany	Representative office
11	Gedeon Richter	2.8%	Budapest, Hungary	Representative office
12	Dr. Reddy's Laboratories Ltd.	2.4%	Hyderabad, India	Representative office
13	Nobel	2.2%	Istanbul, Turkey	Production capacity
14	STADA	2.0%	Bad Vilbel, Germany	Representative office
15	KRKA d.d	1.8%	Novo-Mesto, Slovenia	Representative office

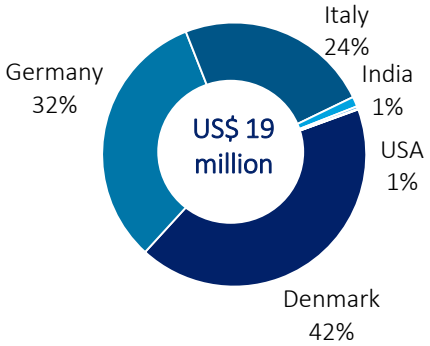
- 15 companies make up the largest share of those supplying the Kazakhstan retail medicine market, with Santo (Polpharma Group) maintaining its place as the largest in 2019, in monetary terms.
- Of the 15 companies, only 2 have production capacity in Kazakhstan, meaning they produce their share of medicines. The remaining companies are the main competitors to domestic producers.
- Foreign companies operate either through representative offices or local distributors participating in SK-Pharmatsiya LLP tenders for state hospitals and medical organisations. In 2020 H1 the largest distributors were Medservice Plus (9%), Ak Niyet (8%), Stopharm (7%), Nobel AFF (7%), Khimpharm (6%) and others.
- The advantages of the importing competitors is their brand (consumer loyalty), a scientific research base (contemporary research and the production of original medicines), capacity to ensure mass production, investment to finance new projects, easier access to external financing, the appropriate production practices in accordance with Good Manufacturing Practices and others.

Source: Kazakhstan pharmaceutical journal “Kazakhstan Retail Medicine Market 2019”

Insulin vaccine and medicine imports into Kazakhstan

Changes in the import of medicines containing insulin into Kazakhstan, US$ thousands

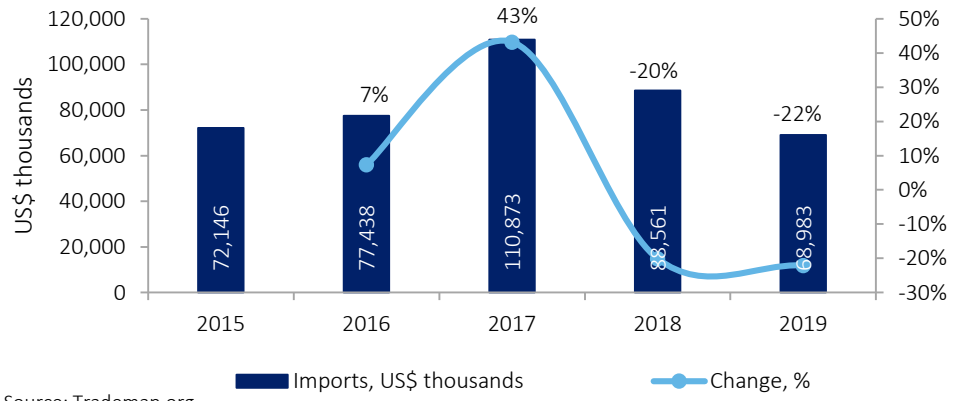


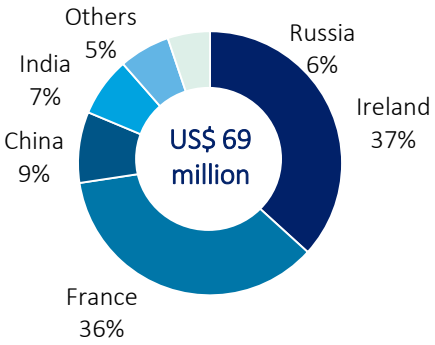


2019 imports

or 82 tonnes in physical terms

Changes in the import of human vaccines, US$ thousands





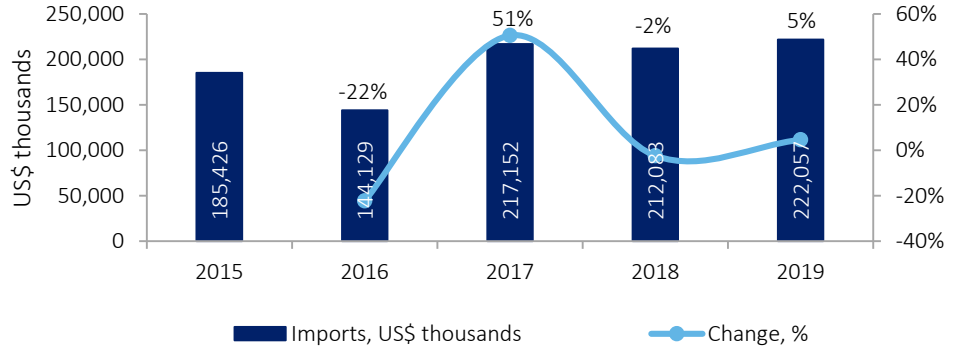
2019 imports

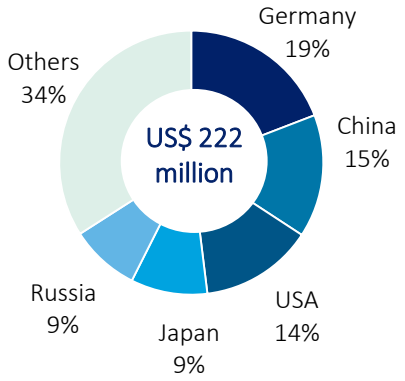
or 121 tonnes in physical terms

Source: Trademap.org

Import of medical goods into Kazakhstan

Changes in the import of devices and apparatus used in medicine, surgery, dentistry or veterinary work, electro-medical apparatus and vision testing equipment into Kazakhstan, US$ thousands

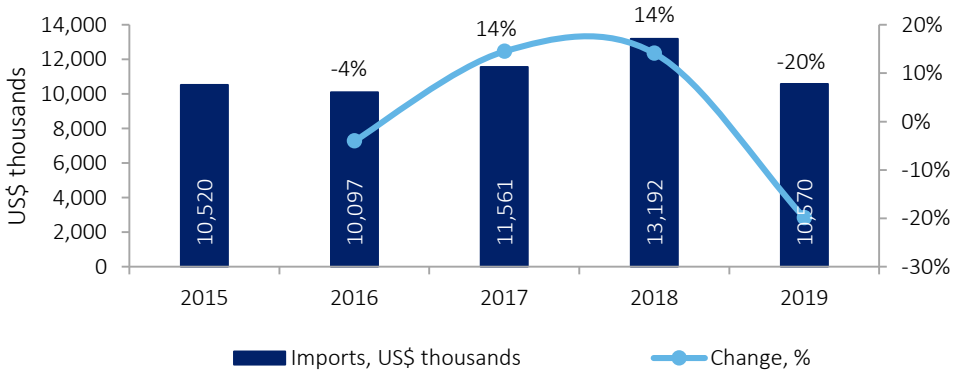


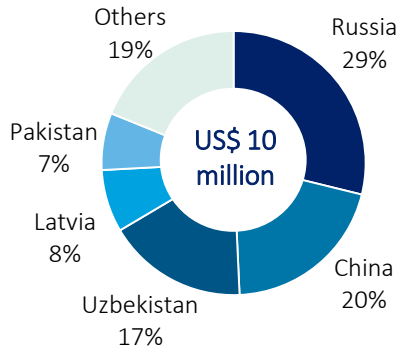


2019 imports

or 6,252 tonnes in physical terms

Changes in the import of cotton wool, gauze, bandages and similar items used in medicine, surgery, dentistry or veterinary work into Kazakhstan, US$ thousands





2019 imports

or 1,427 tonnes in physical terms

Source: Trademap.org

Key competitors – importers of medical goods

According to most experts, roughly 90% of products sold retail in Kazakhstan are produced by overseas companies. Importers have a number of advantages over local companies, such as capacity to produce more technologically developed and popular medical goods. In addition, they have the advantage of brand, greater investment in the financing of new projects, easier access to external financing and others.

Companies on the Kazakhstan retail medical goods market

No.	Company	Country	Logo
1	Johnson & Johnson	USA, Russia	
2	Stryker Osteonics S.A.	Switzerland	
3	MedTronic	Netherlands	
4	Euller LLP	Poland, UK	No logo
5	Gulf Transit FZC	UAE	No logo
6	Tipsan Tibbi Aletler Sanayi Ve Ticaret A.S.	Turkey	
7	Nordic Commerce LP	UK	No logo
8	Galifrey LLP	UK	No logo
9	Arthrex GMBH	USA	

Companies on the Kazakhstan retail medical goods market

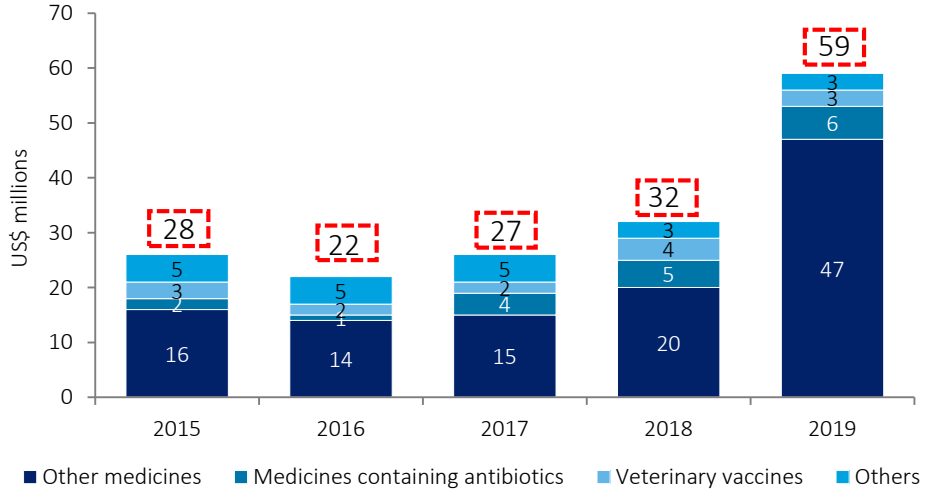
No.	Company	Country	Logo
10	Biosensors International	Switzerland	
11	Asahi Intecc	Japan	
12	MicroVention	USA	
13	Vygon – Perouse Medical	France	
14	Edwards Lifesciences	USA	
15	NOxBOX	UK	
16	Medistim	Norway	
17	Straub Medical	Switzerland	
18	Fcare Systems	Belgium	

Source: IMSI Elim marketing company, company websites

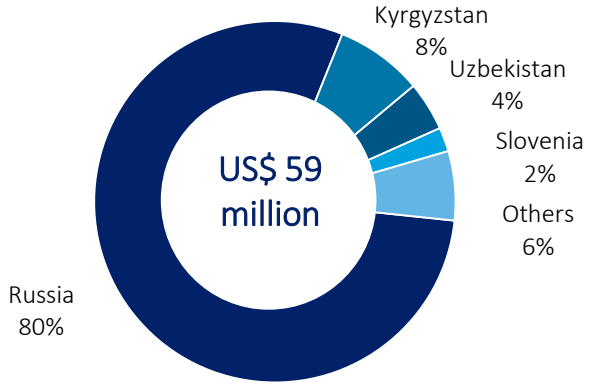
Pharmaceutical exports from Kazakhstan

Medicine exports from Kazakhstan

Changes in and structure of medicine exports from Kazakhstan, US$ millions



Structure of medicine exports from Kazakhstan in 2019, US$, %



Medicine exports from Kazakhstan are insignificant, averaging US$ 34 million in the last 5 years. However, exports have been growing since 2017, mainly thanks to state policy, such as the Comprehensive Plan to Develop the Pharmaceutical and Medical Industry in 2020–2025, which plans to double medicine exports.
According to Fitch Solutions, the largest and best financed local pharmaceutical companies will be best placed to increase exports and meet growing demand for basic medicines in Central Asia and the CIS, although protectionism and complex customs clearance procedures, for example in Uzbekistan, remain serious hurdles.

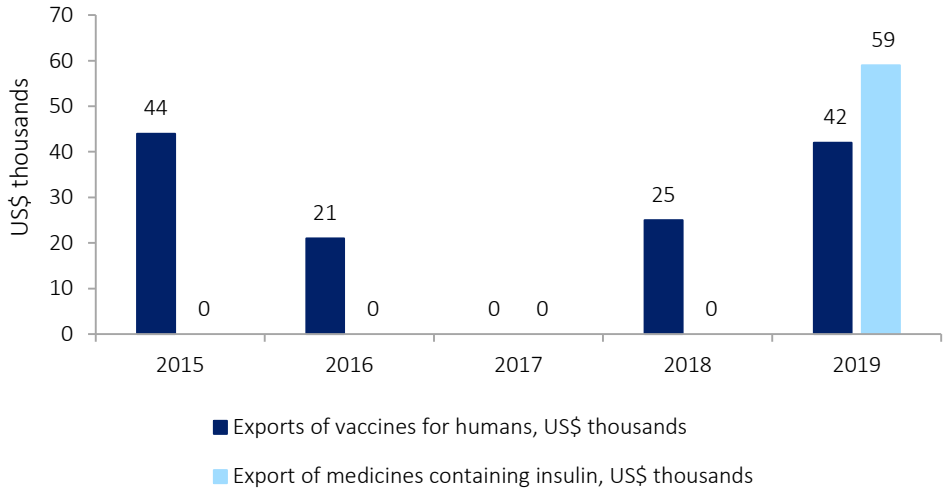
The top-5 importers of Kazakhstan medicine exports account for 98% of total exports. Sales markets for Kazakhstan medicines are mainly neighbouring countries. For example, Russia accounts for 80%, Kyrgyzstan – 8% and Uzbekistan – 4%. Slovenia is responsible for 2%, with all remaining countries registering 6%.

The main Kazakhstan suppliers are JSC Khimpharm, Abdi Ibrahim Global Pharm LLP, JSC Nobel Almaty Pharmaceutical Plant and others.

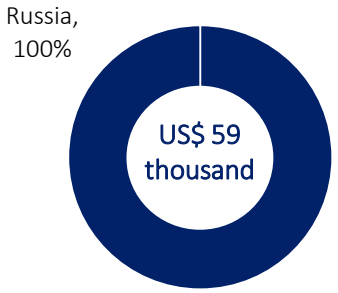
Source: Trademap.org, Fitch Solutions Kazakhstan Pharmaceuticals & Healthcare Report, Q4 2020

Export of vaccines and medicines containing insulin, from Kazakhstan

Dynamics of exports and vaccines for humans and medicines containing insulin, thousand US$



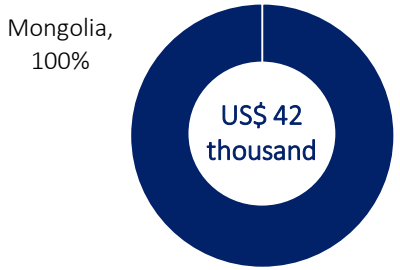
Structure of exports of medicinal products containing insulin in 2019



2019 exports

or 89 kg in physical terms

Structure of exports of vaccines for humans in 2019



2019 exports

n/a for volume in physical terms

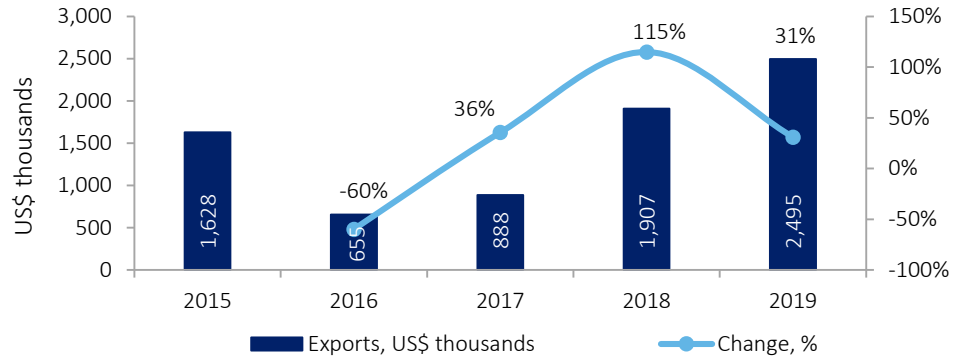
According to the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan, the export of vaccines for humans and medicines containing insulin is insignificant and amounts to less than 1% of the total export of medicines. The export of medicinal products containing insulin began only in 2019.

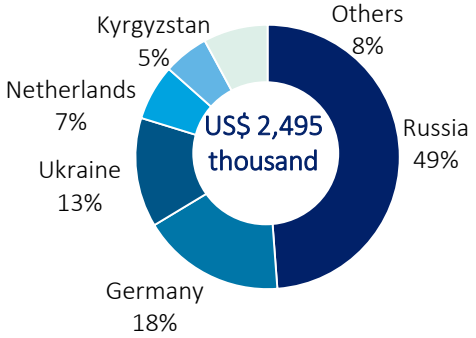
The volume of medicines containing insulin in physical terms was 89 kg, while there are no data on the volume of vaccines for humans.
All exports of medicinal products containing insulin were exported to Russia, in turn, the entire volume of vaccines was supplied to Mongolia

Source: Trademap.org

Exports of medical goods from Kazakhstan

Changes in the export of devices and apparatus used in medicine, and electro-medical apparatus, US$ thousands

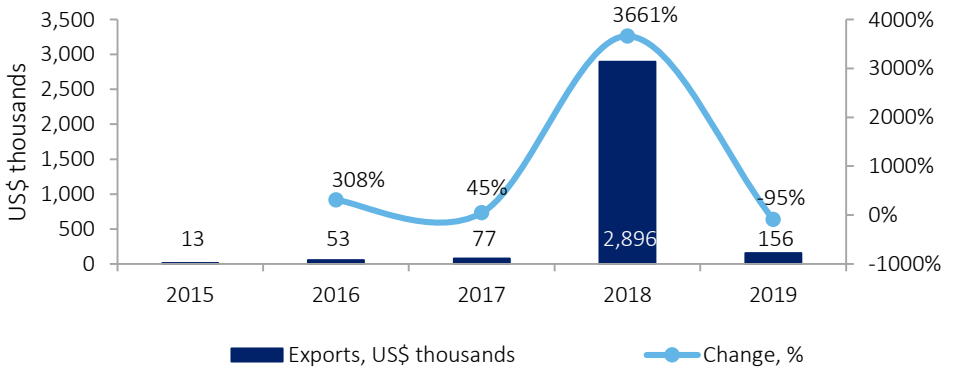


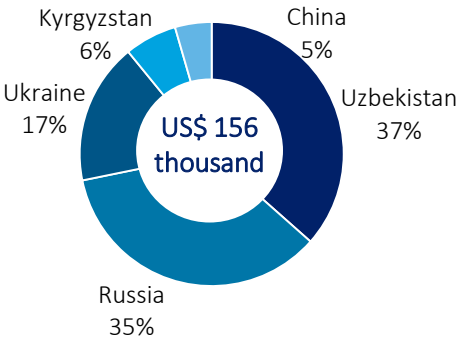


2019 exports

or 543 tonnes in physical terms

Changes in the export of cotton wool, gauze, bandages and similar items for use in medical, surgical, dentistry or veterinary work, US$ thousands





2019 exports

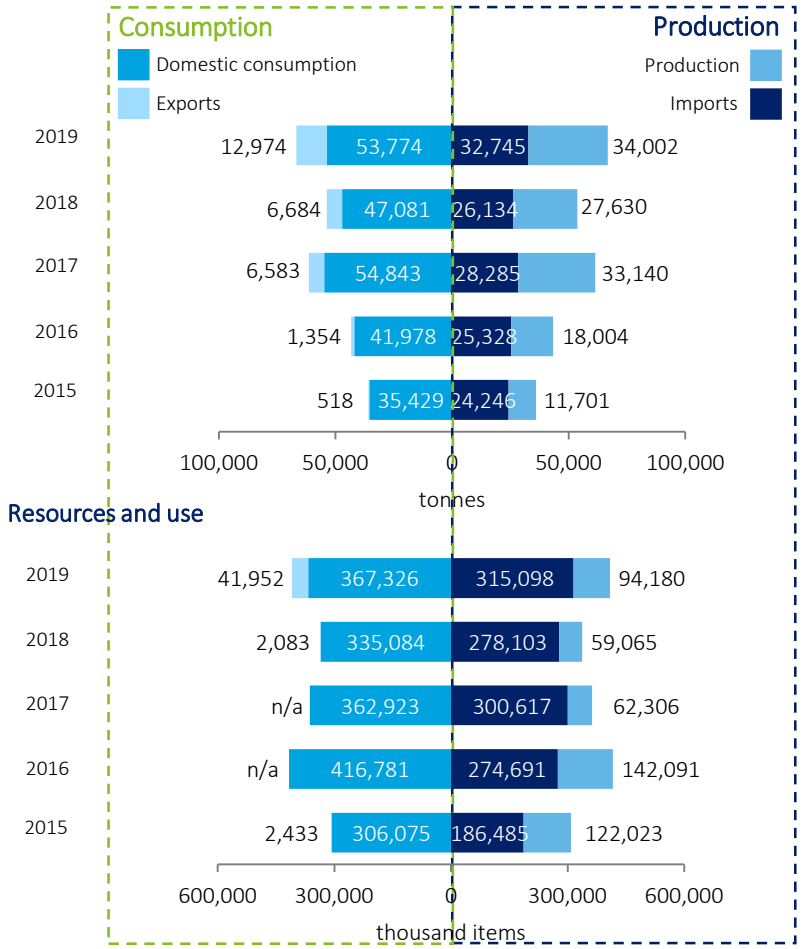
or 37 tonnes in physical terms

Source: Trademap.org

Production and consumption balance

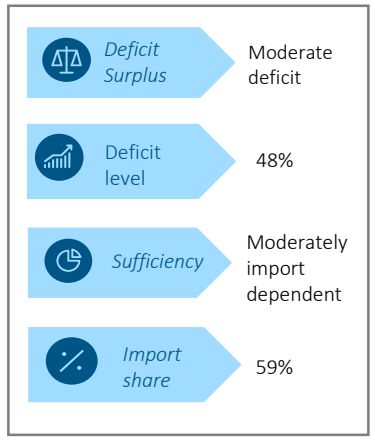
Medicines and syringes

Resources and use

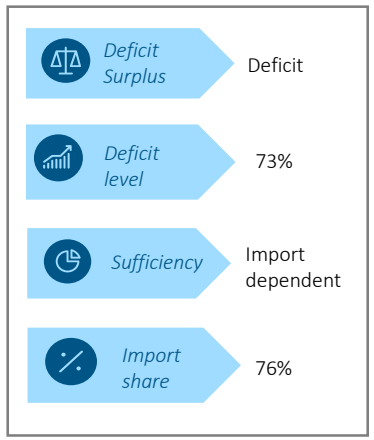


Resources and use

Medicines and various pharmaceuticals



Шприцы

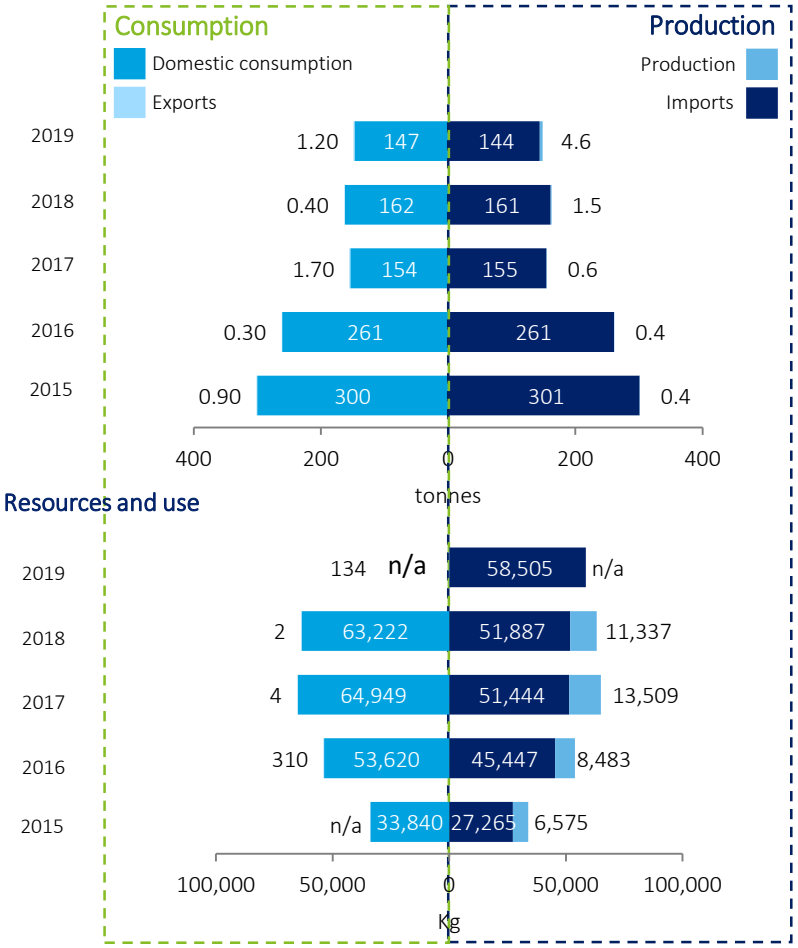


- According to the production and consumption balance of medicines and various pharmaceuticals in physical terms, product demand grew 1.8-fold in the last 5 years. Product imports accounted for 59% of domestic consumption, meaning Kazakhstan is moderately import dependent in this area. However, thanks to state policy, domestic medicine and other pharmaceutical production almost tripled during the period. In 2019, local production exceeded imports, with some product exported. One of the medicine types planned for import substitution is an anti-diabetes product. To that end, in 2018, RV Healthcare (India) in conjunction with the Kazakhstan Ministry of Health announced plans to build a plant to produce anti-diabetes preparations in Kazakhstan. If the project is successful, Kazakhstan would be 100% self-sufficient in the product and be able to supply insulin across the region (open sources).
- Demand for syringes in Kazakhstan grew 1.3-fold in physical terms in 2015–2019. Average syringe consumption in Kazakhstan is 366,931 thousand items per year, with imports accounting for 76% of domestic consumption over 5 years: syringes are an import. A decline in the production of domestic syringes was also recorded. As such, over the same 5-year period, domestic production declined by 30%. The average product deficit for the period is 73%, which testifies to the opportunity to increase domestic production. The majority of syringes were sold domestically and exports in 2019 registered a significant growth.

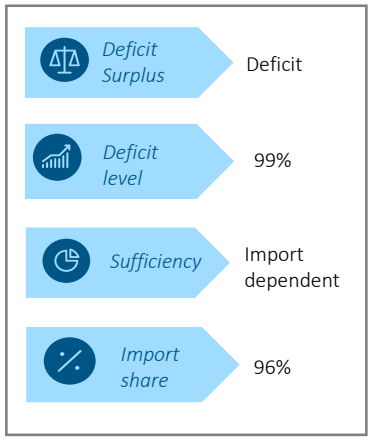
Source: Kazakhstan Statistics Committee, open sources

Vitamins and antibiotics

Resources and use



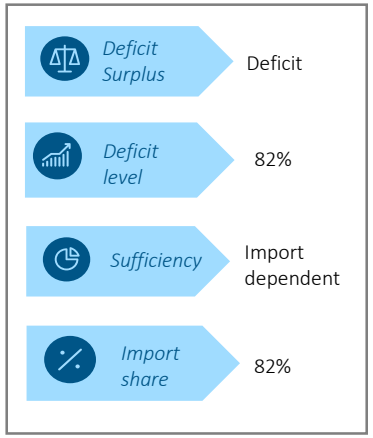
Provitamins, vitamins and derivatives



Demand for provitamins, vitamins and derivatives in Kazakhstan halved in 2015–2019. Average provitamin, vitamin and derivative consumption is 206 tonnes. At the same time, imports in the 5-year period accounted for 96% of domestic consumption, and as such demand is met by imports. Nevertheless, imports declined during the review period and domestic production increased from 0.4 to 4.6 tonnes. The average product deficit for the period is 99%, which testifies to the opportunity to increase domestic production. The majority of vitamins are sold in Kazakhstan. Exports are insignificant.

Resources and use

Антибиотики

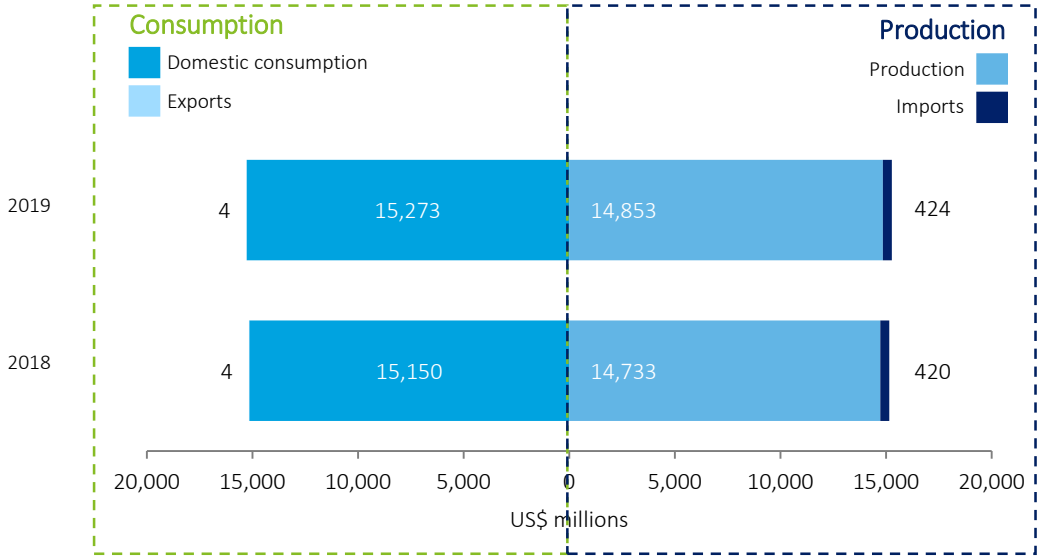


Demand for antibiotics in Kazakhstan grew 1.8-fold in physical terms in 2015–2018. Data for 2019 is not available. Average antibiotic consumption is 53,987 kg. At the same time, imports made up 82% of domestic consumption for the 4-year period: antibiotics are an import dependent product. Nevertheless, domestic production grew 1.7-fold in 2015–2018. Data for 2019 is not available. The average product deficit for the period is 82%, which testifies to the opportunity to increase domestic production. The majority of antibiotics are sold in Kazakhstan. Exports are insignificant.
Thus, all of the products discussed are import dependent and in deficit, meaning these particular areas could be attractive for investors.

Source: Kazakhstan Statistics Committee

Medical instruments and accessories

Production and consumption balance for medical and dentistry instruments and accessories, treatment devices and apparatus; artificial limbs and orthopaedic devices, US$ millions



Sector characteristics

Deficit Surplus	Minor deficit	Deficit level	3%
Sufficiency	Export potential	Import share	3%

Source: Kazakhstan Statistics Committee

Information on medical and dentistry instruments and accessories, treatment devices and apparatus; artificial limbs and orthopaedic devices has only been provided for 2018–2019. Average production consumption is US$ 15,211 million. Local production meets 97% of domestic consumption. The average product deficit is 3%, which testifies to the opportunity to increase domestic production. The majority of products are sold in Kazakhstan. Exports are insignificant.
Thus, compared to medicine, syringe, antibiotic and vitamin production, medical instrument and accessory production is not import dependent. Therefore, this area is less attractive for investors.

Thus, we can rank the investment attractiveness of product niches according to their import dependence and production deficits as follows:

- vitamins;
- antibiotics;
- syringes;
- medicines and various pharmaceuticals;
- medical instruments and accessories.

The most developed product niches are medicines and medical instruments.

Pricing

State price regulation

Kazakhstan law and benchmark countries

According to Order of the Kazakhstan Acting Minister of Health No. 42 dated 19 April 2019 *On the Approval of Rules for Regulating Medicine Prices* (with amendments from 17 June 2020), the State regulates prices in two areas:

- medicines sold on the wholesale and retail markets;
- medicines procured within the framework of the GFMC and the obligatory social medical insurance system ("OSMI").

The State only regulates the prices of medical goods for the GFMC and OSMI system.

1 **Medicine registration**

All domestic and overseas producers and distributors register medicine prices in Kazakhstan. Costs may only be changed once every six months. The National Review Centre sets a benchmark (base) price for each medicine group based on a comparison of prices in benchmark countries (Azerbaijan, Belarus, Bulgaria, Hungary, Greece, Latvia, Lithuania, Russia, Poland, Romania, Slovakia, Slovenia, Turkey, Croatia, the Czech Republic and Estonia). Overseas price benchmarking is practiced in all EU countries, Russia, Uzbekistan and others.

2 **Wholesale mark-ups**

The Kazakhstan Ministry of Health reviews maximum medicine prices every six months by adding a wholesale mark-up or GFMC or OSMI mark-up to the registered price, differentiated according to the registered price.

3 **Retail mark-ups**

Every six months, the Kazakhstan Ministry of Health sets maximum medicine retail prices by adding a retail mark-up to the wholesale price, differentiated according to the maximum wholesale medicine price.

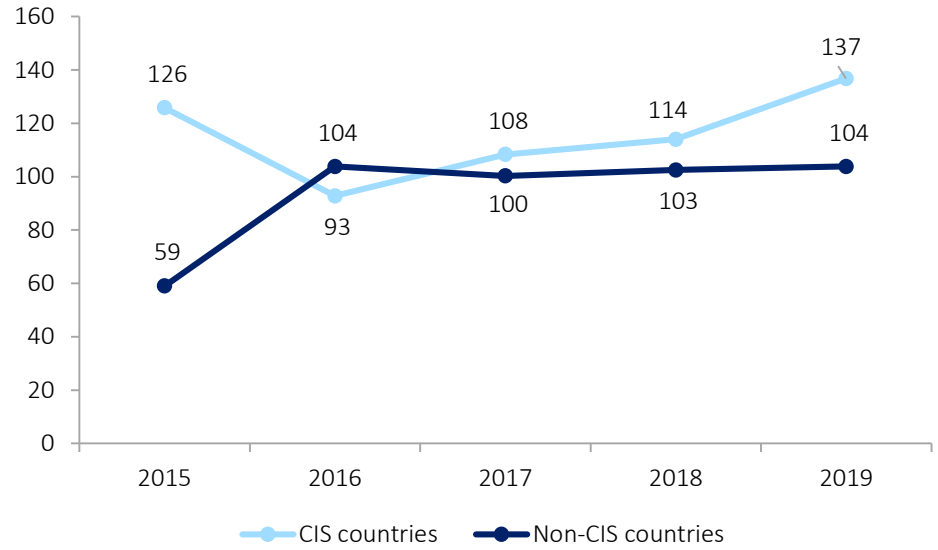
4 **Price register**

The price register is an information system indicating maximum wholesale and retail prices for medicines, and is kept by the National Review Centre.

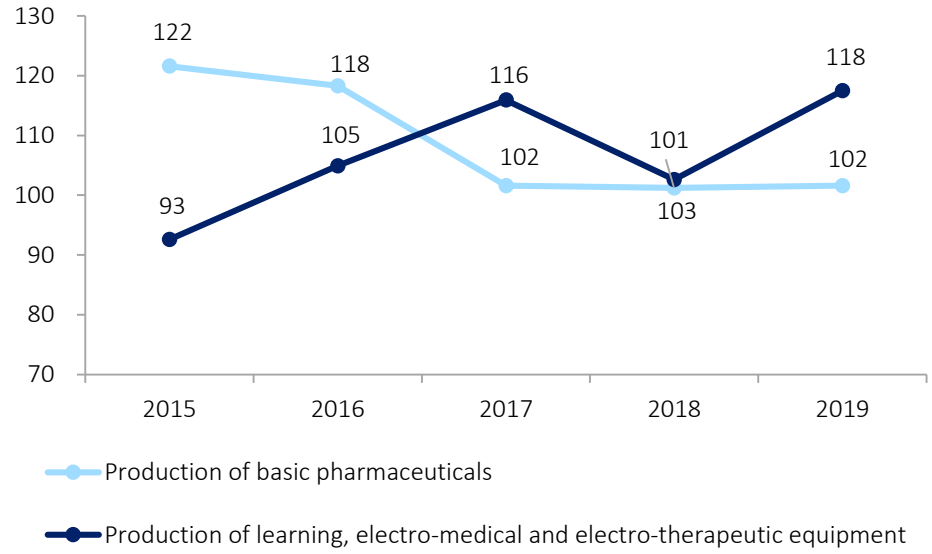
Source: Order of the Kazakhstan Acting Minister of Health No. ҚР ДСМ–42 dated 19 April 2019 *On the Approval of Rules for Regulating Medicine Prices*

Producer price and import index

Import price index for optical, photographic, cinematic, measuring, control, precision, medical and surgical devices and apparatus; watches; parts and accessories, %



Producer price index for pharmaceuticals, %



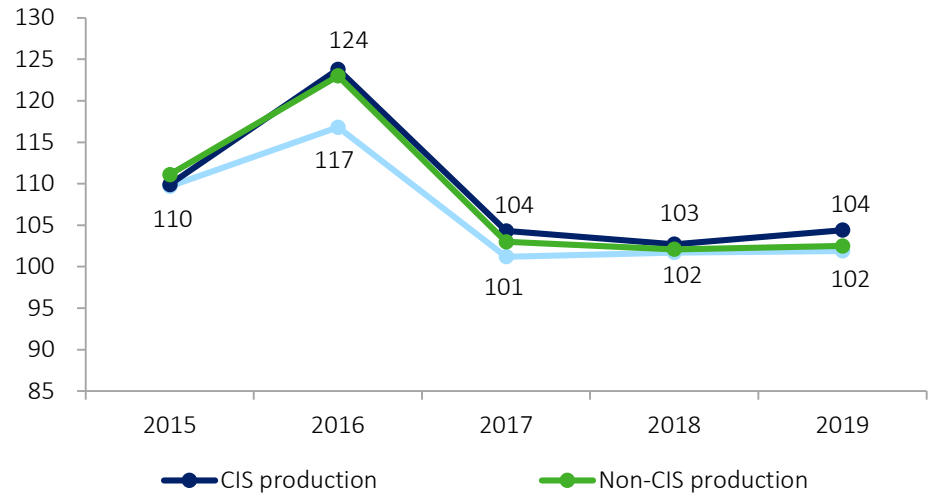
According to the Kazakhstan Statistics Committee, the import price index for medical tools and apparatus increased between 2015 and 2019. The greatest growth was seen in imports from outside the CIS (from 59% to 137%), which was mostly due to devaluation of the national currency from KZT 222 to KZT 383 per US$. The price index for medical equipment manufacturers for the same period changed to a lesser extent – from 93% to 118%.

The opposite was the case with the producer price index for basic pharmaceuticals, which fell from 122% to 102% between 2015 and 2019. The greatest decline in the price index was in 2017 following an increase in procurements by the ID from domestic manufacturers, which led to increased production levels and, subsequently, a reduction in product prices.

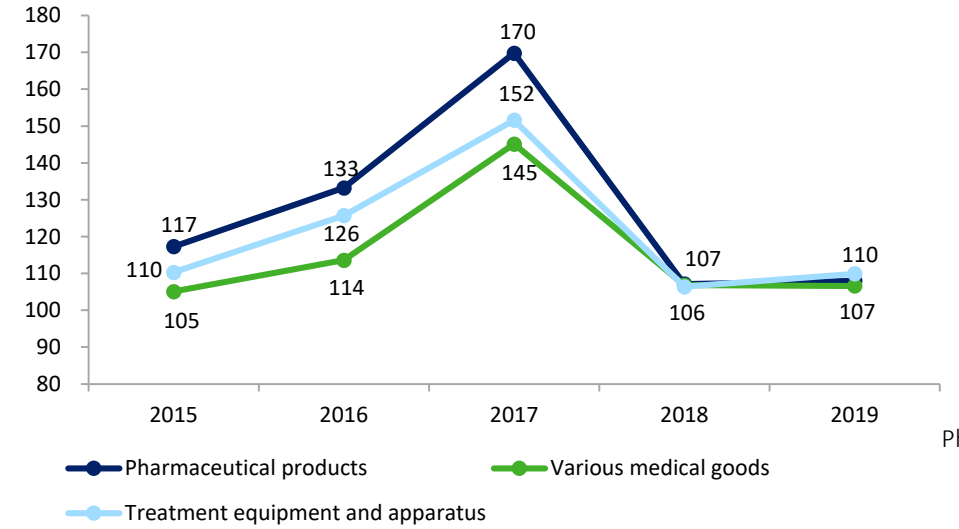
Source: Kazakhstan Statistics Committee

Wholesale and retail sales index

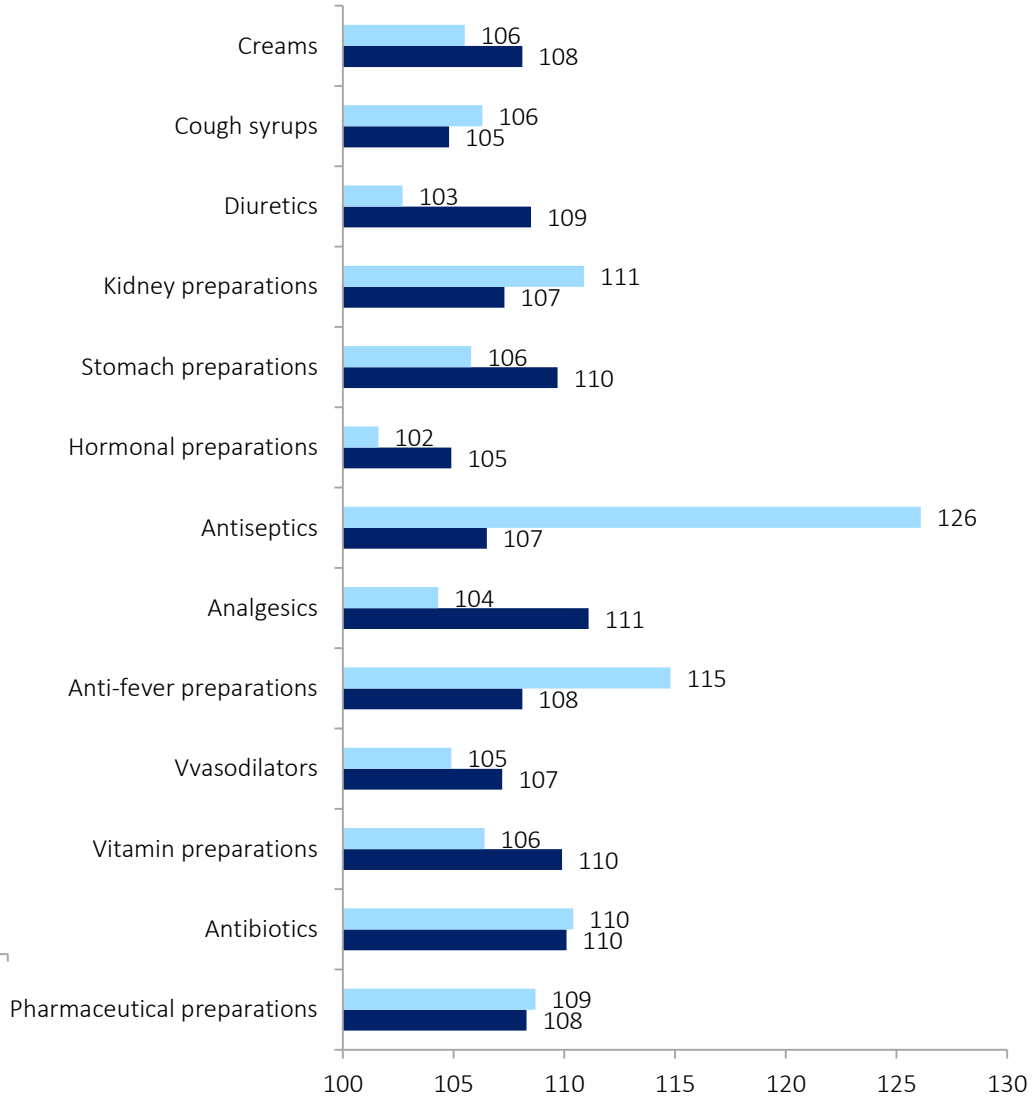
Wholesale pharmaceutical and medical goods index, %



Retail sales index, %



Consumer price index for pharmaceuticals, %



Source: Kazakhstan Statistics Committee

Wholesale and retail prices

Medicine retail prices, KZT*

	2020
Multi-tabs Classic multivitamins, 30 tablets	2,350
Flemoxin Solutab, 500 mg, 20 tablets	2,309
Bronkhikum-C cough medicine, 100 ml	1,374
Cotton wool, 100 g	265
Korvalol, 25 ml	153
Soluble iodine5% ,10 ml	75
Sterile bandage, 5 cm*10 m	63

Medicine wholesale prices, KZT*

	2020
Furacilin	1,339
Erythromycin, 10 tablets	1,339
No-spa	621
Biseptol, 20 tablets	621
Ampicillin trihydrate, 10 tablets	279
Ascorbic acid, 10 tablets	240
Aspirin, 10 tablets	240
Maninil, 120 tablets	721
Validol, 10 tablets	75
Ciprolet, 10 tablets	75
Essentiale, 30 capsules	72
Suprastine, 20 tablets	72

Maximum medicine prices approved by the Kazakhstan Ministry of Health, KZT**

	2020
Siofor 850 (against diabetes)	2,450
Diabeton (against diabetes)	3,724
Januvia (against diabetes)	12,378
Glucobay 50 mg (against diabetes)	2,323
Sinupret extract (against respiratory disease)	5,917
Sinupret forte (against respiratory disease)	4,759
Eucalyptus-M (against respiratory disease)	1,725

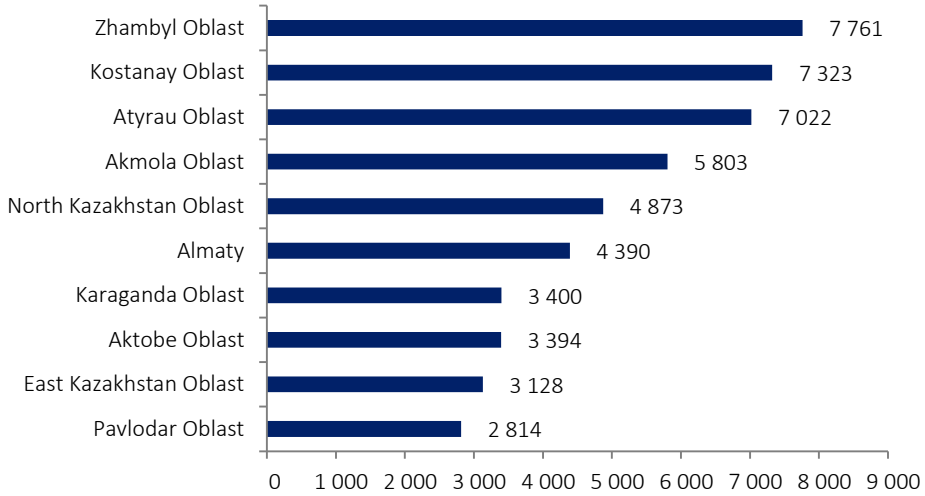
Maximum medicine prices approved by the Kazakhstan Ministry of Health, KZT**

	2020
Movalis (anti-inflammatory, solution)	2,983
Movalis (anti-inflammatory, tablets, 7.5 mg)	3,095
Aspirin (anti-inflammatory)	2,221
Zoladex (oncology, 3.6 mg)	71,068
Fareston (oncology, 20 mg)	8,039
Arimidex (oncology)	21,816
Tamoxifen (oncology, 20 mg)	1,902

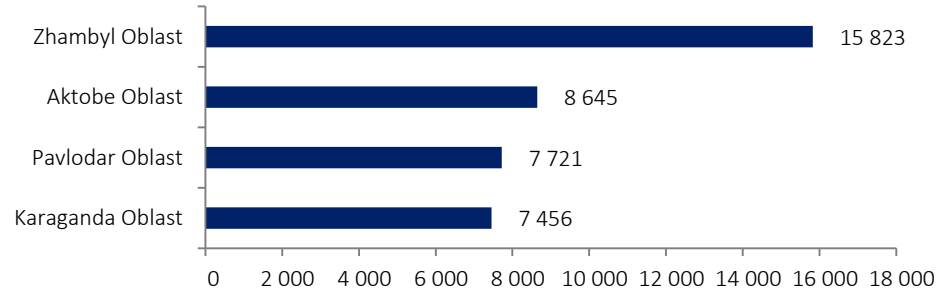
Source: *Kazakhstan Statistics Committee, **Dari.kz application

State regulation of tariffs for utilities

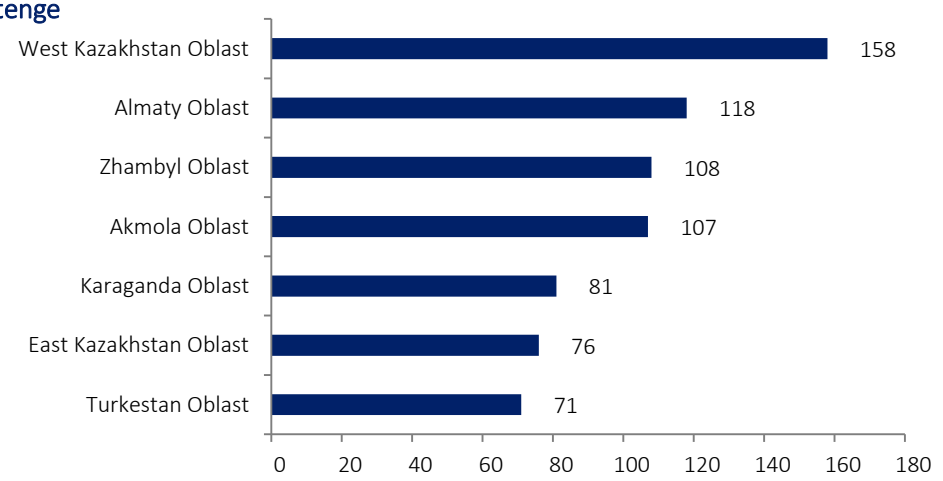
Price per Gcal of heat energy in the regions of Kazakhstan in November 2020, tenge



Price per thousand kWh of electricity in the regions of Kazakhstan in November 2020, tenge



Price per cubic meter of cold water in the regions of Kazakhstan in November 2020, tenge



- In Kazakhstan, there is a state policy of tariff setting in the spheres of natural monopolies, and the state regulation of prices and control over the observance of pricing procedures and obligations of the subjects of the socially significant market are implemented. Utilities belong to the sphere of tariff regulation.
- As of November 2020, the price for heat energy in Kazakhstan averaged 4,991 tenge per Gcal.
- In November 2020, the price for electricity in the country averaged 9,911 tenge per thousand kWh, and the price for cold water averaged 103 tenge per cubic meter.

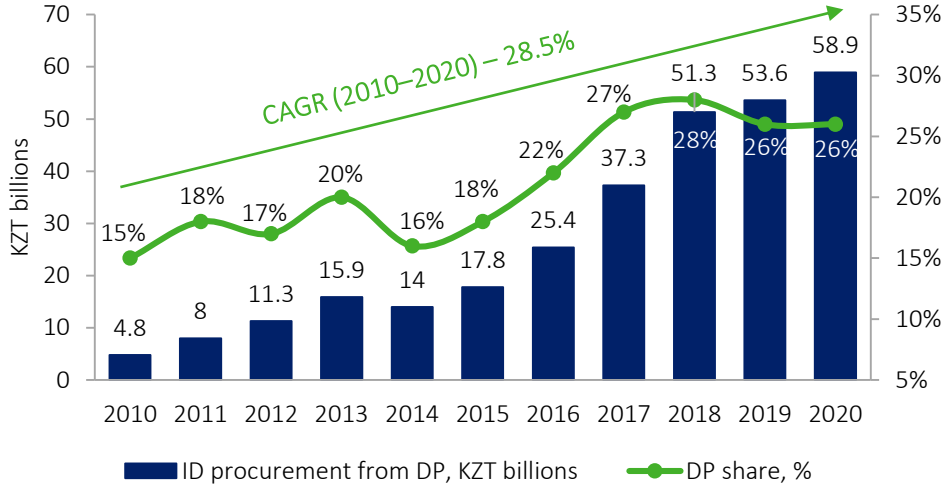
Source : Kazakhstan Statistics Committee

State support

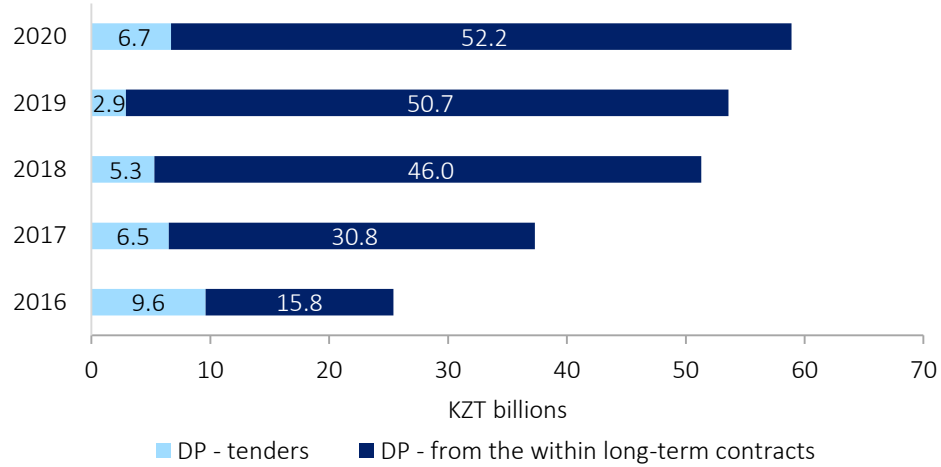
Integrated distributor – SK-Pharmatsiya LLP

On 11 February 2009, the government issued Resolution No. 134 to create SK-Pharmatsiya LLP as part of the Samruk-Kazyna Sovereign Wealth Fund. Its main activities include organising open tenders to purchase medicines within the framework of the GFMC; organising the delivery of medicines and medical tools to state medical institutions; organising the procurement of medical technology using national budget funds and its further transfer to healthcare organisations for finance lease.

Changes in ID procurement levels from the DM, KZT tenge



Changes in ID procurements from the DM, by contract type, KZT billions



Operating results for 2020 H1

- 511 domestically produced medicines and medical goods procured by the government;
- 64 long-term agreements signed with 35 DM for 3,812 items (medicines – 889, medical goods – 2,923);
- DM share in total procurements rose to KZT 58.9 billion (26%);
- roughly US$ 150 million invested in the pharmaceutical industry

GMP standards

One of the main principles of ID procurement of medicines and medical goods is DM support through long-term 10-year supply medicine and medical goods contracts.

When entering into a long-term contract, the supplier commits to launch new pharmaceutical production or upgrade existing production sites in accordance with GMP operating standards, which have been binding for the DM from 1 January 2018.

Source: SK-Pharmatsiya LLP financial statements for 2019 and 2020 H1

Integrated distributor – SK-Pharmatsiya LLP

In the total volume of purchases for 2020, the share of the top 10 DM reaches 87.4%. Nobel AFF JSC and Chimpharm JSC make up 60% in the top 10. Nobel AFF JSC, Chimpharm JSC and Kelun-Kazpharm LLP are exporters. Most of the pharmaceutical companies (6 out of 10) produce medicines, the rest (4 out of 10) produce medical devices. The share of Kazakhstani content of Abdi Ibrahim LLP, Nobel AFF JSC LLP and Dolce LLP is more than 80%.

№	Manufacturer	Volume of 2020, KZT million	The share of Kazakhstani content, %	Production capacity, units/ year	Number of positions in long-term contracts	Export share of production volume, %
1	Nobel AFF JSC	15,786	87%	1,300,000.000	147 drugs	21.4%
2	Chimpharm JSC	15,267	53%	733,440,000	181 drugs	1.4%
3	Karagandinskiy pharmatsevticheskiy Komplex LLC	4,732	65%	126,088	66 drugs	0.0%
4	Abdi Ibrahim LLP	3,739	91%	1,500,000,000	85 drugs	0.0%
5	Kelun-Kazpharm LLP	2,755	66%	90,000,000	28 drugs	29.3%
6	Super-pharm LLP	2,140	68%	32,000,000	319 medical devices	0.0%
7	EcoPharm International LLP	2,081	75%	750,000,000	119 medical devices	0.0%
8	Dolce LLP	2,043	83%	157,000,000	49 medical devices	0.0%
9	KazMedProm LLP	1,679	70%	55,000,000	22 medical devices	0.0%
10	Nur-Mai Pharmatsiya LLP	1,293	30%	6,000,000	42 drugs	0.0%

Source: Kazakh Invest SK-Pharmatsiya LLP Investment Guide Book

Pharmaceutical and Medical Industry Development Plan

Comprehensive Plan for the Development of the Pharmaceutical and Medical Industry for 2020-2025 was developed in 2020. The plan consists of 62 events and 8 sections. The implementation of the activities of this Comprehensive Plan is carried out jointly with interested ministries, local executive bodies, National Chamber of entrepreneurs of the Republic of Kazakhstan Atameken and industry associations.

01 **Internal market regulation**
- simplification of access to the market of drugs and medical devices of domestic manufacturers and investors;
- increasing the share of domestic pharmaceutical products in purchases.

02 **Regulation within the EAEU**
- harmonization of requirements within the EAEU;
- implementation of EAEU standards for export promotion.

03 **State support**
- increasing the price competitiveness of domestic products;
- stimulation to expand and increase production.

04 **R&D**
- development of science in the field of biomedicine;
- determination of promising directions for the development of the pharmaceutical and medical industry.

05 **Attracting investment**
- preparation of investment proposals for targeting global pharmaceutical manufacturers;
- attraction of four multinational companies from Big Pharma: Pfizer, AvantGen Inc., Boston BioPharma, Servier.

06 **Staff**
- formation of an educational order, taking into account the needs of manufacturers of drugs and medical devices;
- training of specialists in universities to work with biological agents.

07 **marking**
- a pilot project for drug labeling and traceability;
- introduction of alternative methods of drug labeling;
- determination of the list of drugs and the stages of implementation of mandatory labeling.

08 **Increase in domestic manufacturers capacities**
- encouraging domestic manufacturers to build new pharmaceutical production facilities or modernize existing production sites.

The effect of the plan

At least 30 new projects

2,000 new jobs

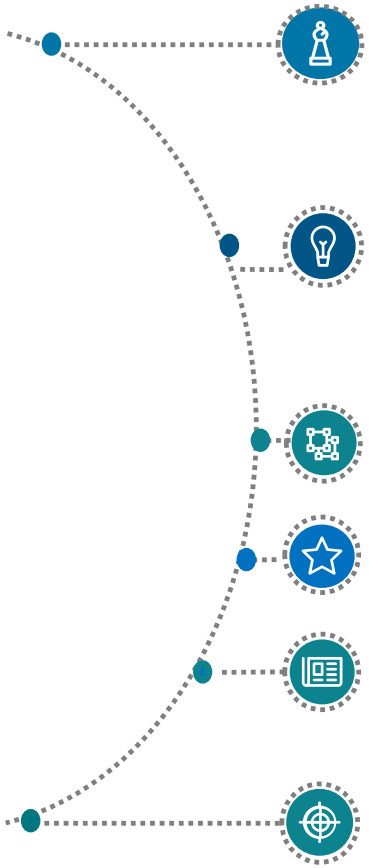
297 new types of drugs

2,348 new types of medical devices

Source: Kazakh Invest SK-Pharmatsiya LLP Investment Guide Book

JSC QazIndustry

JSC QazIndustry is the integrated coordinator assisting industrial enterprises at all production stages – from technological solutions and new production lines, to certification, exports and digital technology implementation. JSC QazIndustry provides free financial state support for Kazakhstan producers, innovation grants to commercialise technology, compensate businesses for costs incurred to increase performance and promote exports.



Participation in overseas exhibitions and festivals

- registration fees;
- exhibition site rent;
- stand rent, assembly/dismantling, additional equipment;
- exhibition site development, design and planning;
- prepare, design, transport and create advertising materials;
- economy class travel for two employees;
- accommodation for two employees.

Advertising of goods

- in the media (printed, television, radio and internet);
- in public places (banners, light boxes, audio and video transmission, outdoor and vehicle advertising);
- preparation of audio and video and advertising materials; lease of advertising constructions and surfaces.

Delivery of goods

- Size: 50%, Amount: нeup to 1/5 of a budget, historical period: 12 months.
- Rail, air, sea, freight forwarding.

Branch, representative office, trading site and warehouse maintenance

- office space lease/sublease;
- trading site and warehouse lease.

Product compliance

- with established technical regulations, standards, including organisation standards, or contractual terms or confirmation of rights to sell goods overseas (certificates, permits, registration and other documentation).

Specialised catalogue

- development and translation into foreign languages and publication

Registration procedures

- trademarks (brand);
- for e-trading sites.

Source: JSC QazIndustry

JSC QazIndustry

JSC QazIndustry is the integrated coordinator assisting industrial enterprises at all production stages – from technological solutions and new production lines, to certification, exports and digital technology implementation. JSC QazIndustry provides free financial state support for Kazakhstan producers, innovation grants to commercialise technology, compensate businesses for costs incurred to increase performance and promote exports.

Improve business competencies

Size: 40%
Amount: up to KZT 30 million
Historical period: 24 months

- train engineering staff, including senior management (Kazakhstan and overseas);
- hire foreign nationals (including for product promotion)

Improve process performance

Size: 40%
Amount: up to KZT 60 million
Historical period: 24 months

- Draft documentation and/or implement progressive management and production technology (ASU, software); Implement energy-saving and green technology; Implement project management standards;
- Implement economical production approaches (Kaizen,TPM, Six Sigma, 5 S, Kanban and others);
- Implement Industry 4.0 technology (elements).

Improve production processes

Size: 40%
Amount: up to KZT 60 million
Historical period: 24 months

- technical/energy audit; IT consulting; advice on resolving issues related to the creation, reorganisation and operation of corporate management systems; product promotional design; engineering plan and solution; search for new constructions, technology and equipment; assemble, install and launch equipment; carry out the virtual launch and operation of equipment; engineering and construction work; digital and virtual engineering work; prepare prototypes and/or digital models; equipment maintenance;
- carry out product industrial testing; implement additional reality in production.

Comprehensive industrial and innovative project plan

Size: 40%
Amount: up to KZT 60 million
Historical period: 24 months

- Draft a comprehensive industrial and innovative project plan to obtain long-term lease financing etc.

Source: JSC QazIndustry

Sector support within the framework of the Entrepreneurial Code

Entities implementing or planning to implement investment projects related to priority activities according to Government Resolution No. 13 dated 14 January 2016 may be entitled to state support as stipulated by the Kazakhstan Entrepreneurial Code, and within the framework of a number of state programmes.

State support stipulated by the Kazakhstan Entrepreneurial Code No. 375–V dated 29 October 2015

The Entrepreneurial Code stipulates the following investment preferences depending on investment project classification

Investment project
- Customs duty exemptions
- State grants
- Import VAT exemptions

Priority investment project (create new production)
- Customs duty exemptions
- State grants
- Tax exemptions
- Investment subsidies

Priority investment project (expansion of existing production)
- Customs duty exemptions
- State grants
- CIT exemptions

Special investment project
- Customs duty exemptions
- Import VAT exemptions

Sample of Entrepreneurial Code priority activities

Group name	Class or subclass
Production of basic pharmaceuticals and pharmaceuticals	Production of basic pharmaceuticals
	Production of pharmaceuticals and medical materials
Production of various rubber items	Production of rubber sanitary-hygienic and medical goods
Production of various plastic items	Production of plastic medical and dentistry accessories
	Production of plastic ophthalmologic items
Production and processing of glass items	Production of syringes and other medical laboratory equipment
	Production of glass laboratory, hygienic or pharmaceutical items
Production of measuring, testing and navigation instruments and devices	Production of medical thermometers
	Production of medical and surgical instruments
Production of radiation, electro-medical and electro-therapeutic equipment	Production of tomography equipment
	Production of equipment to generate magnetic-resonance images
	Production of medical ultrasound equipment
	Production of electro-radiographs
	Production of electro-medical endoscopy equipment
	Production of medical laser equipment
	Production cardio-stimulators
	Production of hearing aids

Source: Kazakhstan Entrepreneurial Code

Free economic zones

A special economic zone ("SEZ") is a part of Kazakhstan territory where special tax rules apply and infrastructure facilities are in place to perform priority activities.

Pharmaceutical production, medical goods and manufacturing industry products are recognised as priority activities in the following SEZ:

- Astana – New City;
- Aktau Seaport;
- Saryarka;
- ICCZ Khorgos;
- Astana-Technopolis;

- Under the Tax Code, SEZ members are exempt from:

To receive tax concessions, SEZ members should meet all of the following simultaneously

01 Be registered as a taxpayer with the tax authorities in the SEZ

02 Have no structural divisions outside of the SEZ

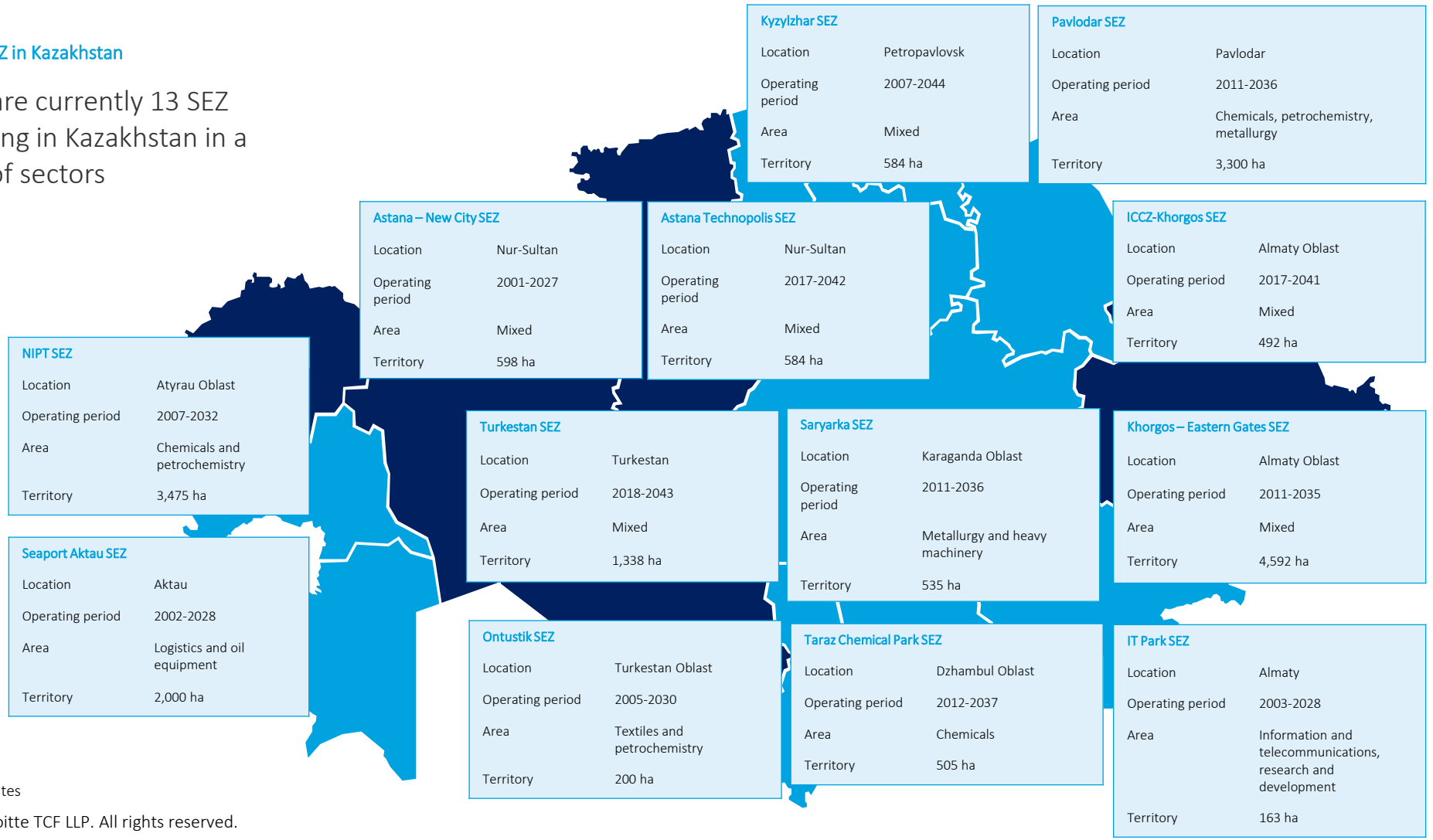
03 No less than 90% of its aggregate annual income should be generated from the sale of goods of own production/services (in the relevant priority areas for the given SEZ)

Source: adilet zan

Free economic zones

Current SEZ in Kazakhstan

There are currently 13 SEZ operating in Kazakhstan in a range of sectors



Kyzylzhar SEZ

Location	Petropavlovsk
Operating period	2007-2044
Area	Mixed
Territory	584 ha

Pavlodar SEZ

Location	Pavlodar
Operating period	2011-2036
Area	Chemicals, petrochemistry, metallurgy
Territory	3,300 ha

Astana – New City SEZ

Location	Nur-Sultan
Operating period	2001-2027
Area	Mixed
Territory	598 ha

Astana Technopolis SEZ

Location	Nur-Sultan
Operating period	2017-2042
Area	Mixed
Territory	584 ha

ICCZ-Khorgos SEZ

Location	Almaty Oblast
Operating period	2017-2041
Area	Mixed
Territory	492 ha

NIPT SEZ

Location	Atyrau Oblast
Operating period	2007-2032
Area	Chemicals and petrochemistry
Territory	3,475 ha

Turkestan SEZ

Location	Turkestan
Operating period	2018-2043
Area	Mixed
Territory	1,338 ha

Saryarka SEZ

Location	Karaganda Oblast
Operating period	2011-2036
Area	Metallurgy and heavy machinery
Territory	535 ha

Khorgos – Eastern Gates SEZ

Location	Almaty Oblast
Operating period	2011-2035
Area	Mixed
Territory	4,592 ha

Seaport Aktau SEZ

Location	Aktau
Operating period	2002-2028
Area	Logistics and oil equipment
Territory	2,000 ha

Ontustik SEZ

Location	Turkestan Oblast
Operating period	2005-2030
Area	Textiles and petrochemistry
Territory	200 ha

Taraz Chemical Park SEZ

Location	Dzhambul Oblast
Operating period	2012-2037
Area	Chemicals
Territory	505 ha

IT Park SEZ

Location	Almaty
Operating period	2003-2028
Area	Information and telecommunications, research and development
Territory	163 ha

Source: SEZ sites

Brief global market overview

World trends

Nowadays the development of the global pharmaceutical industry is characterized by active introduction of new technologies such as artificial intelligence, blockchain, 3D printing and others. Pharmaceutical companies are improving their operations, accelerating the discovery of new drugs and vaccines as well as creating new business models and diversify revenues by integrating new services.

Company	Description	Use of digital platforms and other modern technologies
Pfizer	American multinational pharmaceutical company, one of the largest in the world. Headquarters: New York, USA.	2012: Moved its supply chain to cloud data 2015: Complete visibility into the status of products at all times; identify demand and quickly alert the best production facility to manufacture. Pfizer is also looking to move into the e-commerce space for prescription medications in the near future.
MERCK	American multinational pharmaceutical company. Headquarters: Kenilworth, USA.	Merck uses Hadoop to crunch huge amounts of data so it can develop vaccines faster. 15 billion calculations and more than 5.5 million batch-to-batch comparisons to link characteristics in fermentation phase to yield in final purification.
AMGEN	American biotechnology firm. In 2013, the company became the leader in sales of Neulasta/Neupogen and Enbrel. Headquarters: Thousand Oaks, USA.	The company uses machine learning and deep learning techniques to more accurately diagnose osteoporotic fractures.

Main trends

Automation — Process automation, robotization, deliveries using drones and other technologies.

Cooperation — Companies join up in consortia to create new drugs and medical devices. One such example is the collaboration between GSK and DPAC, Pfizer and BioNTech, Novartis and UC Berkeley.

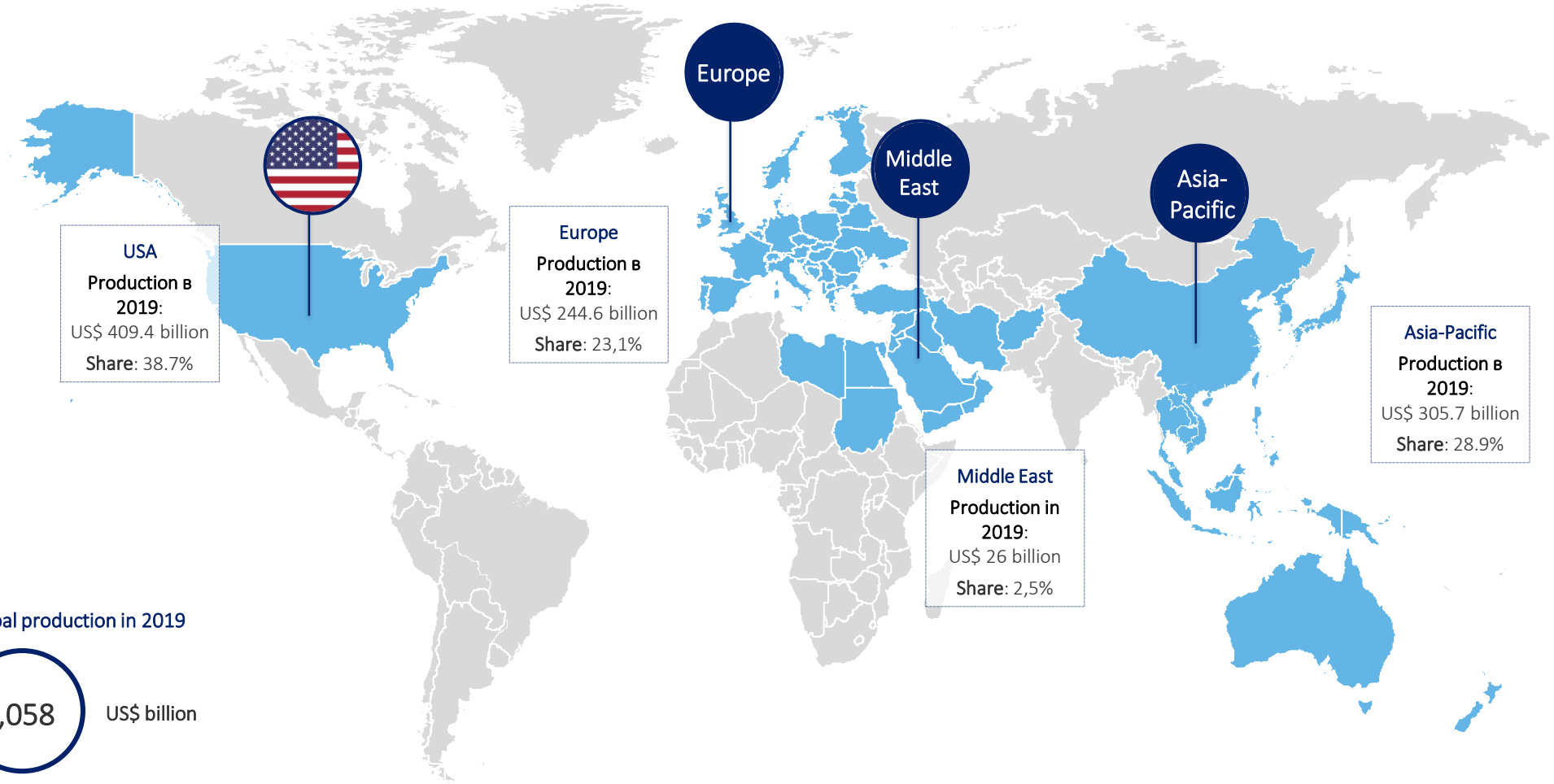
Blockchain — Using blockchain and artificial intelligence to increase transparency and the time it takes to approve drugs.

Artificial intelligence — Identification of a new target molecule from a central repository using artificial intelligence and cognitive technologies.

Source: Deloitte recourses How Pharmaceutical & Life Sciences companies benefit from RPA & Cognitive; AI and Analytics

Global medicine production

Global medicine production amounted to US$ 1,058 billion in 2019. Average annual growth in global production for 2015-2019 was 3.6%. According to MarketLine forecasts, global medicine production will reach US$ 1,192 billion in 2024, which is an average annual growth rate of 2.4%. The global producers with the greatest market share are Johnson & Johnson (7.4%), Bayer (5.4%), Novartis (5,2%), Pfizer (5,2%) and others.



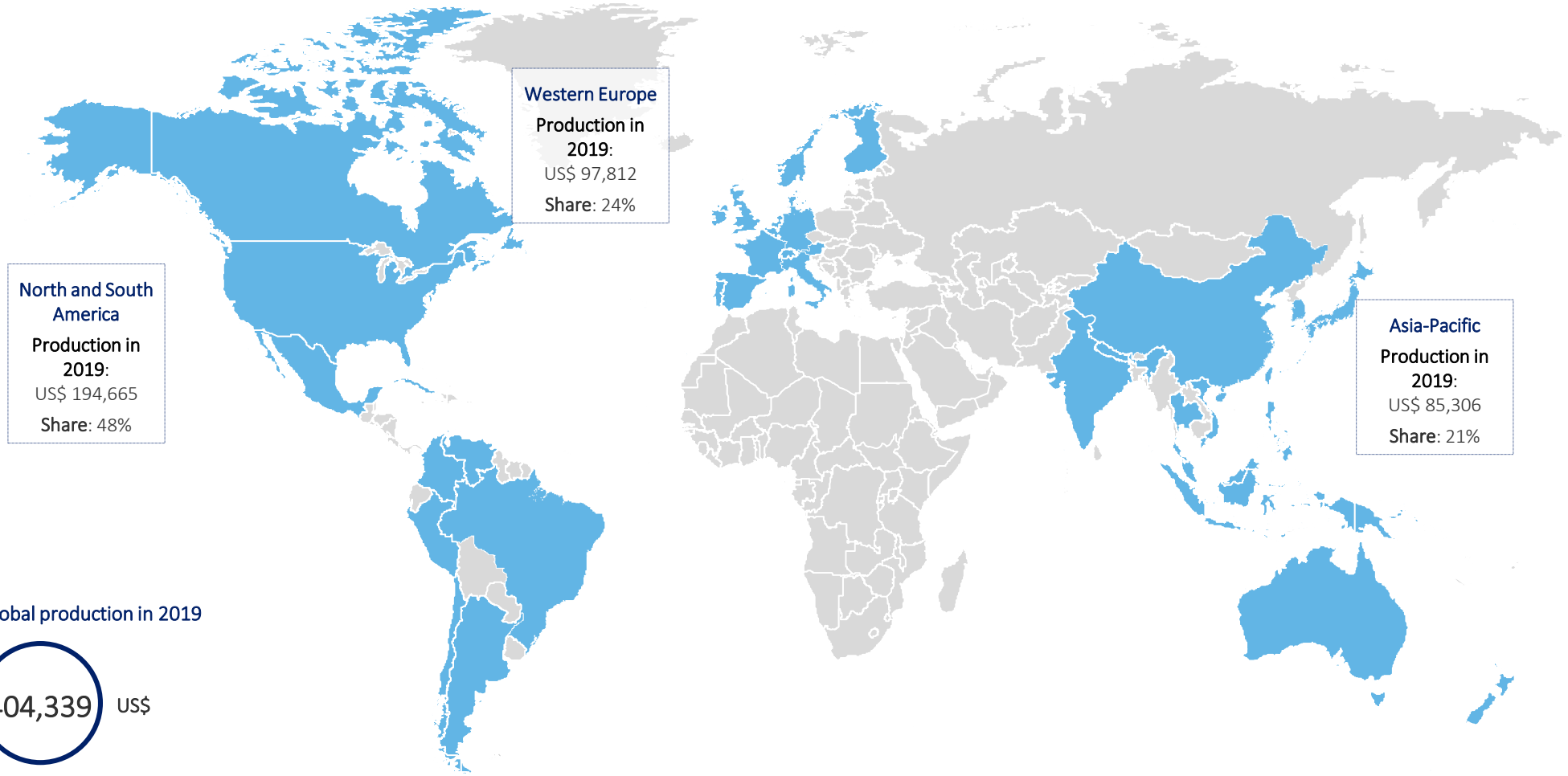
Global production in 2019

1,058 US$ billion

Source: MarketLine Global Pharmaceuticals, May 2020

Global the production of medical goods

Global production of medical goods reached US$ 404 million in 2019. The majority of production was generated by North and South America – 48%, Western Europe – 24%, and Asia-Pacific – 21%. The Middle East was responsible for the remaining 7%. Average annual growth in global production in 2015-2019 was 5.5%. According to Fitch Solutions forecasts, global the production of medical goods will reach US$ 511,141 in 2023, which is an annual average growth rate of 6%.



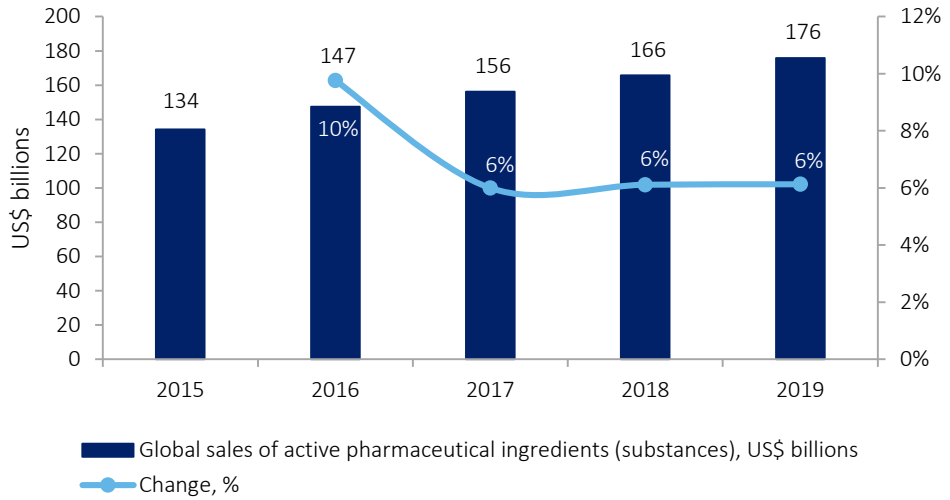
Global production in 2019

404,339 US$

Source: Fitch Solutions Worldwide Medical Devices Market Forecasts, January 2020

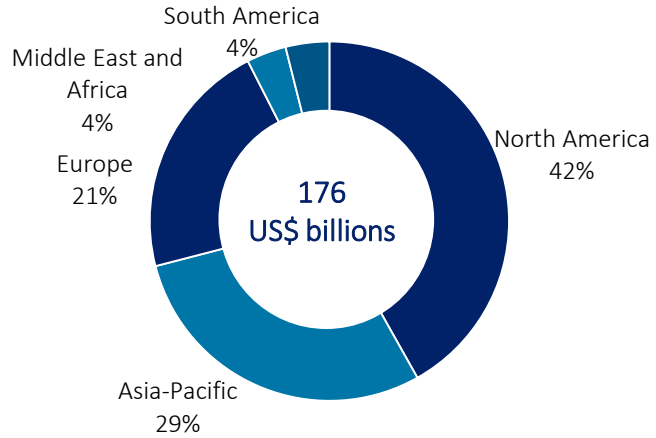
Global substance production

Changes in global sales of active pharmaceutical ingredients (substances), US$ billions



Substance sales in the last 5 years increased, averaging US$ 156 billion (CAGR 6%) due to greater demand from the pharmaceutical industry, the growing introduction of preparations and growth in the spread of new illnesses and diseases. The main substance supplier is China, which is part of the logistics chain of global manufacturers. However, in February 2020, Chinese companies began to close in large numbers due to the pandemic. Some larger pharmaceutical companies are beginning to create transnational holding companies to produce active pharmaceutical substances to circumvent traditional Chinese suppliers. Sanofi, for example, has brought together approximately 10 producers of active pharmaceutical ingredients in Europe in its holding company.

Structure of global sales of active pharmaceutical ingredients (substances) by region in 2019, %



North America is the largest substance sales market, generating US$ 74 billion in 2019, of which 82% are sold to America. According to the FDA USA and other trading agencies, 75–80% of substances imported into the USA come from China and India. The main advantage of substance production in these countries is price, and as such the price per kg of substance from China is US$ 27, while in Europe, the price is roughly US$ 1,452 (Remedium publishing house).

The Asia-Pacific region is the second largest in terms of substance sales thanks to Japan, China and India.

Europe is the third largest in terms of substance sales, generating US$ 38 billion in 2019, of which 21% comes from Germany. The Middle East, Africa and South America are responsible for insignificant substance sales.

Source: Mordor Intelligence Global Active Pharmaceutical Ingredients (API) Market (2019–2024), Remedium publishing house

Conclusions and recommendations

Competitive advantages of the pharmaceutical sector

01 Growth in demand for pharmaceuticals

- According to Fitch Solutions calculations, the Kazakh pharmaceutical market is the largest market in Central Asia in absolute terms. According to the agency's forecasts, in the period from 2020 to 2024, the Kazakh pharmaceutical market will expand at an average annual growth rate (CAGR) of 12.3%.
- The growth of the pharmaceutical market in the country will be due to the introduction of a compulsory social health insurance system and a new price policy for medicines.
- 2015 to 2019 the growth of the pharmaceutical market of the Republic of Kazakhstan was recorded. The reasons for this growth are the launch of new projects within the framework of industrialization and an increase in the volume of purchases of the Single Distributor SK-Pharmacy LLP from domestic producers.
- It is also worth noting the provision of state support by the development institute of QazIndusrty JSC, which provides assistance to industrial enterprises at all stages - from technological solutions and new production lines, to certification, export and implementation of digital technologies.

Demand for medicines

1,145 US$ million in 2016

1,470 US$ million in 2019

Demand for medical tools and apparatus

143 US$ million in 2016

219 US$ million in 2019

Pharmaceutical sector growth drivers

Increased state costs

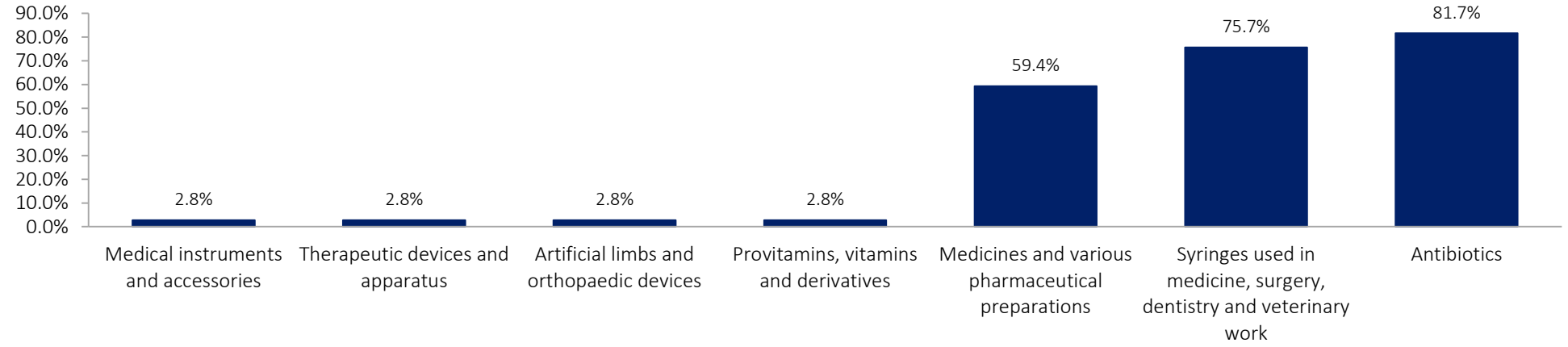
Introduction of new laws (GMP, social insurance and price regulation)

More people have access to medical services and medicine

Competitive advantages of the pharmaceutical sector

02 Import substitution and export potential

Share of imports in domestic consumption



Export potential

Medical and dentistry instruments and accessories; therapeutic devices and apparatus; artificial limbs and orthopaedic devices

Moderate import dependence/export potential exists

Medicines and various pharmaceuticals

Import dependence

Kazakhstan is still dependent on imports for specific medicines and medical goods. For example, Kazakhstan imports syringes, antibiotics and provitamins.

It is also dependent on imports for medicines containing insulin, human vaccines, cotton wool, gauze, bandages and other medical tools.

- Kazakhstan does not produce raw materials – substances, which makes further medicine production more difficult, and for that reason the Kazakhstan is import dependent with respect to substances.
- Nevertheless, DM receive state support from SK-Pharmatsiya LLP, which takes the form of the procurement of medicines through tenders and long-term supply contracts.

Competitive advantages of the pharmaceutical sector

03 State support

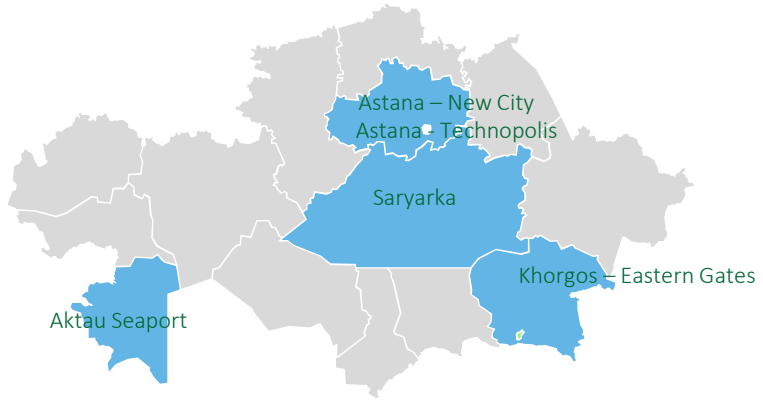
The State provides support for priority projects within the framework of the Entrepreneurial Code, state procurements, long-term supply contracts with SK-Pharmatsiya LLP and other support measures from JSC *QazIndusrty.* In addition, investment projects are entitled to apply for free economic zone membership.

Forms of state support:

- Customs duty exemptions
- State grants in kind
- Investment subsidies
- Import VAT exemptions
- Income tax exemptions
- Land tax exemptions
- Property tax exemptions
- Simplified process to hire foreign nationals

Production of pharmaceuticals and medical goods are recognised as priority activities in the following SEZ:

:



Forms of state support for SEZ members:

- Exemptions from:
  - *CIT, VAT, customs duties, as well as land and property taxes*
- Land with facilities
- Simplified process to hire foreign nationals

List of abbreviations

List of abbreviations

JSC	Joint stock company
ATC	anatomic–therapeutic–chemical
GDP	Gross domestic product
GFMC	Guaranteed free medical care
US$	US Dollar
ID	Integrated distributor
CIT	Corporate income tax
kg	Kilogram
n/a	not available or no data
VAT	Value added tax
DM	Domestic manufacturer
Kazakhstan	Republic of Kazakhstan
SEZ	Free economic zone
LLP	Limited liability partnership
CAGR	Compound Annual Growth Rate
EIU	The Economist Intelligence unit
GMP	Good Manufacturing Practice

Deloitte.