USAID
FROM THE AMERICAN PEOPLE

USAID
Financial Sector Transformation Project

OPPORTUNITIES FOR LEASING MEDICAL EQUIPMENT IN UKRAINE

A MARKET SURVEY

December 2019
Kyiv, Ukraine

USAID
FROM THE AMERICAN PEOPLE

USAID FINANCIAL SECTOR TRANSFORMATION PROJECT

OPPORTUNITIES FOR LEASING MEDICAL EQUIPMENT IN UKRAINE

A MARKET SURVEY

December 2019

This report is made possible by the support of the American people through the United States Agency for International Development (USAID). The contents of this report are solely the responsibility of the USAID Financial Sector Transformation Project, being implemented by DAI Global LLC. The opinions expressed do not necessarily reflect the views of USAID or the United States Government.

CONTENTS

ABBREVIATIONS

CAGR	**Compound Annnual Growth Rate**
CE	Conformité Européenne
CMU	Cabinet of Ministers of Ukraine
DME	Durable Medical Equipment for Home Use
ELFA	Equipment Leasing and Finance Association, USA
EU	European Union
GDP	Gross Domestic Product
IC	Insurance Company
IFC	International Financial Corporation, World Bank Group
MEDICARE	National Health Insurance Program in the United States for Senior Citizens
MedTech Europe	European Trade Association.
MHC	Ministry of Health Care of Ukraine
NHCSU	National Health Care Service of Ukraine
R&D	Research and Development
SMEs	Small and Medium-sized Entities
USA	United States of America
USAID	United States Agency for International Development

GLOSSARY

Government guaranteed medical service package[1]:
All services provided by a primary care physician are 100% guaranteed, free, and paid from the central budget

Medical institution[2]:
A legal entity of any form of ownership and legal structure or its stand-alone subdivision whose key objective is to provide medical services to the public, based on an appropriate license and professional activities of medical (pharmaceutical) staff.

Medical device (brief), as defined by World Health Organization (WHO)[3]:
An article, instrument, apparatus or machine that is used in the prevention, diagnosis or treatment of illness or disease, or for detecting, measuring, restoring, correcting or modifying the structure or function of the body for some health purpose. Typically, the purpose of a medical device is not achieved by pharmacological, immunological or metabolic means.

Medical equipment:
Medical devices requiring calibration, maintenance, repair, user training and decommissioning – activities usually managed by clinical engineers. Medical equipment is used for the specific purposes of diagnosis and treatment of disease or rehabilitation following disease or injury; it can be used either alone or in combination with any accessory, consumable or other piece of medical equipment. Medical equipment excludes implantable, disposable or single-use medical devices.

Medical practice[4]:
A type of business activities in health care that is carried out by medical institutions and sole proprietors to provide license-based medical assistance and medical services.

[1] https://www.kmu.gov.ua/ua/news/yaki-doslidzhennya-mozhna-zrobiti-u-zakladah-pervinnoyi-medichnoyi-dopomogi-moz
[2] http://www.visnuk.com.ua/ua/pubs/id/7229
[3] https://www.who.int/medical_devices/definitions/en/
[4] https://zakon.rada.gov.ua/laws/show/285-2016-п

CHAPTER 1: GLOBAL HEALTH CARE AND MEDICAL EQUIPMENT LEASING MARKET

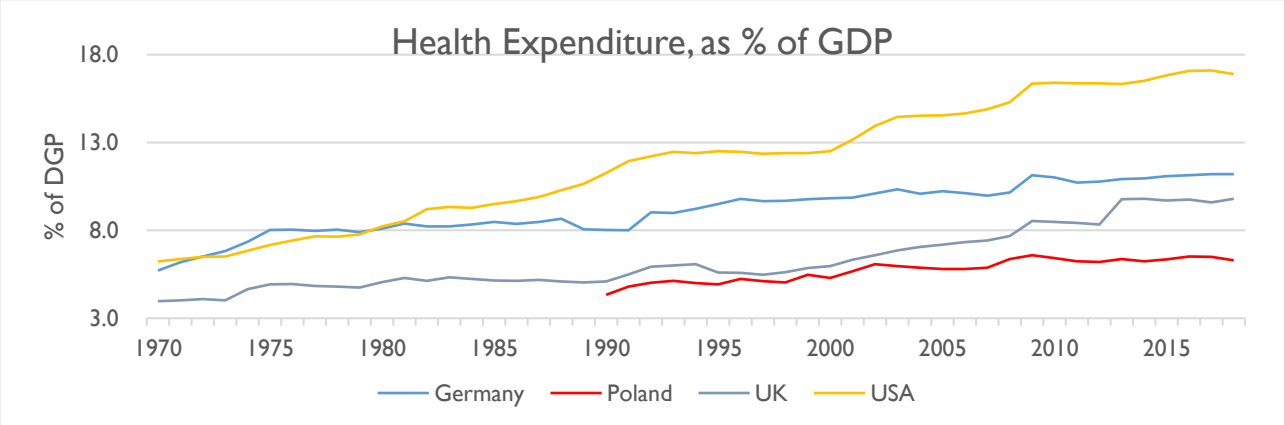
THE FUTURE IS NOW …

Global health care spending is projected to increase at an annual rate of 5.4% to $10.059 trillion in 2018–2022, a considerable rise from the 2.9% ($7.724 trillion) in 2013–2017. This increase is a result of the expansion of health care coverage in developing markets, the growing care needs of elderly populations, advances in treatments and health technologies, and rising health care labor costs.

Per-person health care spending is expected to continue to vary widely, ranging from $11,674 in the United States to just $54 in Pakistan in 2022. Efforts to close this gap will be constrained by higher population growth in developing economies.

However, it is essential to understand that higher per-person spending does not always equate to higher-quality health care. If we consider 10 developed countries, the United States ranks last in overall health care performance, even though its per capita spending is 50% greater than the next country.[5]

Adequate financing of health care is critical for the implementation of reforms. However, there are limits on what the state and private institutions can afford and what taxpayers will agree to pay. The percentage of Gross Domestic Product (GDP) spent on health care is a critical factor, as is how efficiently and effectively the funds are deployed. The Health Care/% GDP indicator for developed countries had been steadily growing from 1970 to 2016. Over this period of time, the indicator more than doubled.



Source: OECD [6]

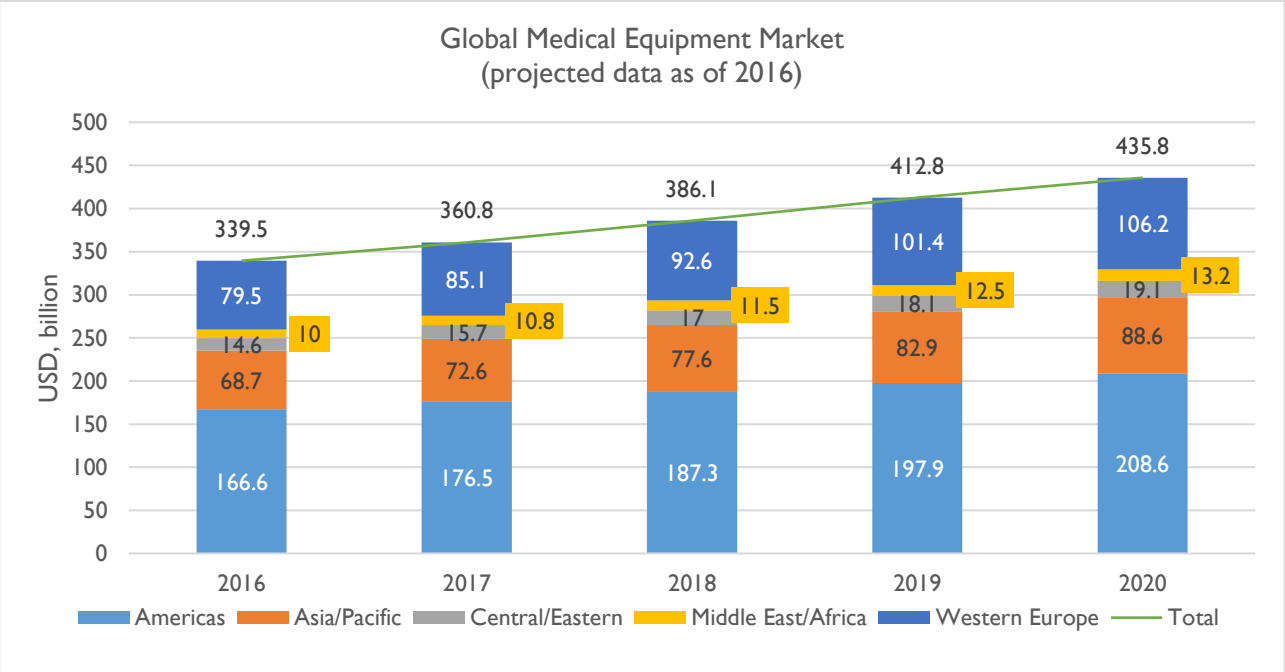
The rapid advance of digital medical technologies requires considerable investments that few can afford to finance using their own working capital. What can be useful here is such an amount and sources of funding that will align payments with benefits to make capital investments both possible and financially sustainable.

Examples of medical technologies include: ultra-precise robotized surgical equipment, high-detail medical imaging equipment for early diagnostics, automation of labs to reduce test processing time, diagnostics at medical outlets for faster prioritization of patients, automated dispensers to avoid errors with drugs, telehealth for easier access to treatment, and many other things. [7]

[5] https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Life-Sciences-Health-Care/gx-lshc-hc-outlook-2019.pdf
[6] https://stats.oecd.org/Index.aspx?DataSetCode=SHA
[7] https://new.siemens.com/global/en/products/financing/whitepapers/whitepaper-relieving-the-pressure.html

According to the EvaluateMedTech report, worldwide medtech sales are expected to grow by 5.6% annually from 2017 through 2024, reaching $595 billion.[8] Other sources confirm that information, stating that the global medical equipment market will grow by $119.98 billion during 2018-2022.[9]

According to earlier estimates of the U.S. International Trade Administration, sales of medical devices will grow at an annual rate of 6.4% during 2016-2020, reaching about $440 billion. The United States is expected to remain the largest world market of medical equipment, although the Asia/Pacific and Western European markets will be expanding rapidly in the coming years.



Source: U.S. International Trade Administration[10]

In developing countries, the private medical business is increasingly focused on buying high quality medical equipment that the public sector cannot provide. The cost of equipment is offset by lower production and labor costs, ensuring high returns for investors.

Projected Global Medical Technologies Sales by Device Area in 2024[11].

Experts forecast that in vitro diagnostics will continue to be the number one medical device, with annual sales of $79.6 billion in 2024 and a 13.4% share of the medical equipment industry.

The largest annual increase expected between 2017 and 2024 is 9.1% in the segment of neurological equipment, with projected sales of $15.8 billion in 2024. The slowest growing segments in the top 15 are diagnostic imaging and orthopedics, both set to experience growth of just 3.7%.

[8] http://info.evaluategroup.com/rs/607-YGS-364/images/WPMT2018.pdf
[9] https://www.technavio.com/report/global-medical-devices-market-analysis-share-2018?utm_source=pressrelease&utm_medium=bw&utm_campaign=t9_wk25&utm_content=IRTNTR23234
[10] www.trade.gov/topmarkets/pdf/medical_devices_executive_summary.pdf
[11] https://www.evaluate.com/sites/default/files/media/download-files/WPMT2018_0.pdf

PROJECTED SALES OF TOP 15 CATEGORIES OF MEDICAL DEVICES

Rank	Device Area	WW Sales ($bn)		CAGR % Growth	WW Market Share		Chg. (+/-)	Rank Chg. (+/-)
		2017	2024		2017	2024		
1.	**In Vitro Diagnostics (IVD)**	52.6	**79.6**	+6.1%	13.0%	13.4%	+0.4pp	-
2.	**Cardiology**	46.9	**72.6**	+6.4%	11.6%	12.2%	+0.6pp	-
3.	**Diagnostic Imaging**	39.5	**51.0**	+3.7%	9.8%	8.6%	-1.2pp	-
4.	**Orthopedics**	36.5	**47.1**	+3.7%	9.0%	7.9%	-1.1pp	-
5.	**Ophthalmics**	27.7	**42.2**	+6.2%	6.8%	7.1%	+0.3pp	-
6.	**General & Plastic Surgery**	22.1	**34.3**	+6.5%	5.5%	5.8%	+0.3pp	-
7.	**Endoscopy**	18.5	**28.3**	+6.3%	4.6%	4.8%	+0.2pp	+1
8.	**Drug Delivery**	18.5	**25.3**	+4.6%	4.6%	4.3%	-0.3pp	-1
9.	**Dental**	13.9	**21.6**	+6.5%	3.4%	3.6%	+0.2pp	-
10.	**Diabetic Care**	11.7	**19.8**	+7.8%	2.9%	3.3%	+0.4pp	+3
11.	**Wound Management**	13.0	**17.8**	+4.6%	3.2%	3.0%	-0.2pp	-1
12.	**Healthcare IT**	11.8	**17.6**	+5.9%	2.9%	3.0%	+0.1pp	-1
13.	**Neurology**	8.6	**15.8**	+9.1%	2.1%	2.7%	+0.5pp	+3
14.	**Nephrology**	11.7	**15.6**	+4.2%	2.9%	2.6%	-0.3pp	-2
15.	**Ear, Nose & Throat (ENT)**	8.9	**13.1**	+5.7%	2.2%	2.2%	+0.0pp	-
	Top15	342.0	**501.7**	+5.6%	84.4%	84.4%	-0.0pp	
	Other	63.1	**92.9**	+5.7%	15.6%	15.6%	+0.0pp	
	Total WW Medtech Sales	405.0	594.5	+5.6%	100.0%	100.0%		

Note: The analysis is based on top 300 medical companies. Sales in 2017 are taken from company financial statements. Sales are projected until 2024 based on the reconciliation of analysts' estimates of sales by asset category.

DIAGNOSTIC IMAGING SALES MARKET FORECAST UP TO 2024[12].

One of the most common types of equipment to be leased is diagnostic imaging equipment (CT scans, mammographs, ultrasounds, CTs and MRIs, X-rays and other equipment). Therefore, the forecast for this market should be considered in greater detail.

According to forecasts, diagnostic imaging equipment sales between 2017 and 2024 will grow from $39.5 billion to $51 billion. Siemens Healthineers will remain the top company in diagnostic imaging with projected sales of about UAH 12 billion and a 23.5% market share in 2024.

DIAGNOSTIC IMAGING SALES MARKET FORECAST UP TO 2024

Rank	Company	WW Sales ($m)*		CAGR	WW Market Share		Rank Change
		2017	2024	2017-24	2017	2024	2017-24
1.	SiemensHealthineers	9,168	11,990	+3.9%	23.2%	23.5%	-
2.	GeneralElectric	8,769	11,006	+3.3%	22.2%	21.6%	-
3.	Philips	7,787	10,813	+4.8%	19.7%	21.2%	-
4.	Canon	3,890	4,415	+1.8%	9.8%	8.7%	-
5.	FUJIFILMHoldings	2,189	2,821	+3.7%	5.5%	5.5%	-
6.	CarestreamHealth	1,180	1,547	+3.9%	3.0%	3.0%	-
7.	Hitachi	1,169	1,362	+2.2%	3.0%	2.7%	-
8.	KonicaMinolta	871	936	+1.0%	2.2%	1.8%	-
9.	VarexImaging	557	784	+5.0%	1.4%	1.5%	+3
10.	Hologic	599	731	+2.9%	1.5%	1.4%	-
	Top 10	36,180	46,404	+3.6%	91.5%	91.0%	
	Other	3,365	4,611	+4.6%	8.5%	9.0%	
	Total Industry	39,545	51,015	+3.7%	100.0%	100.0%	

*Note: Sales include equipment service costs.

[12] https://www.evaluate.com/sites/default/files/media/download-files/WPMT2018_0.pdf

Worldwide Medtech Sales[13] in 2017: Top 20 Companies[14]

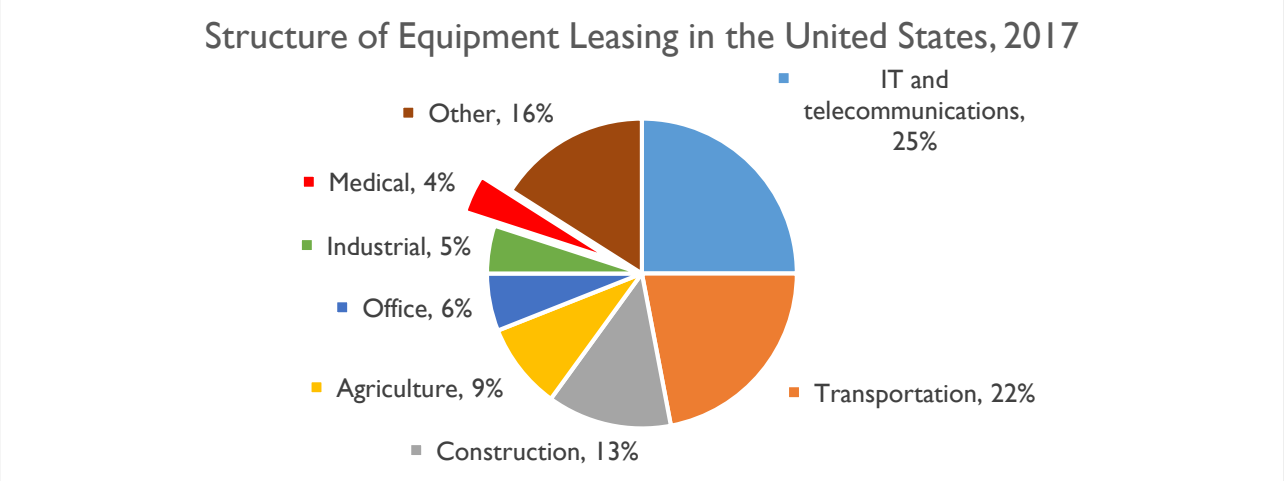
Medtronic is the largest medtech company with sales of $30 billion in 2017. Despite the lowest growth rate among the top 20 companies Medtronic achieved medical device sales of $30 billion, giving the company a 7.4% market share.

Worldwide Medtech Sales in 2017

Rank	Company	Medtech Sales ($bn)		Market Share	Rank	Company	Medtech Sales ($bn)		Market Share
		2017	% Growth	2017			2017	% Growth	2017
1.	Medtronic (USA)	30.0	+0.8%	7.4%	11.	Danaher (USA)	8.7	+10.6%	2.1%
2.	Johnson & Johnson (USA)	26.6	+5.9%	6.6%	12.	Zimmer Biomet (USA)	7.8	+1.8%	1.9%
3.	Abbott Laboratories (USA)	16.0	+60.9%	4.0%	13.	B. Braun Melsungen (Germany)	7.7	+7.2%	1.9%
4.	Siemens Healthineers (Germany)	15.5	+3.1%	3.8%	14.	Essilor International (France)	7.3	+6.7%	1.8%
5.	Philips (The Netherlands)	13.6	+3.8%	3.3%	15.	Baxter International (USA)	7.3	+2.9%	1.8%
6.	Stryker (USA)	12.4	+9.9%	3.1%	16.	Novartis (Switzerland)	6.0	+3.6%	1.5%
7.	Roche (Switzerland)	12.3	+5.4%	3.0%	17.	Olympus (Japan)	5.6	+5.4%	1.4%
8.	Becton Dickinson (USA)	11.0	-3.6%	2.7%	18.	3M (USA)	5.5	+4.4%	1.4%
9.	General Electric (USA)	10.2	+4.2%	2.5%	19.	Terumo (Japan)	4.9	+12.8%	1.2%
10.	Boston Scientific (USA)	9.0	+7.9%	2.2%	20.	Smith & Nephew (United Kingdom)	4.8	+2.1%	1.2%
	Total Top 20	222.1	+7.1%	54.8%		Other	182.9	+1.6%	45.2%

Medical Equipment Leasing Around The World

According to the ELFA's survey, medical equipment represented 4% of new business leasing volume in the United States in 2017[15]. This equipment includes medical imaging, diagnostic, surgical and electronic devices, furniture, fixtures and equipment for hospitals.



[13] Medical technology, or "medtech", encompasses a wide range of health care products and is used to treat diseases and medical conditions affecting humans. Such technologies are intended to improve the quality of healthcare delivered through earlier diagnosis, less invasive treatment options and reduction in hospital stays and rehabilitation times. Recent advances in medical technology have also focused on cost reduction. Medical technology may broadly include medical devices, information technology, biotech, and health care services.

[14] https://www.evaluate.com/sites/default/files/media/download-files/WPMT2018_0.pdf

[15] https://www.elfaonline.org/docs/default-source/data/2018-fact-sheets/elfafactsheet_medical-equipment_aug2018_final.pdf?sfvrsn=bbe3870d_2

The European medical equipment and technology market was estimated at €110 billion. Based on manufacturers' prices, this accounted for 29% of the global market, which is the second largest indicator after the United States (about 43% of the market).

In Poland, the leasing portfolio of medical equipment grew 39.1% from 2017 to 2018 (from 0.838 billion zl to 1.166 billion zl). Moreover, in 2018, the medical equipment leasing segment itself accounted for 5.4% of the total equipment leasing portfolio and 1.6% of the entire leasing portfolio.

Leading players in the medical equipment leasing market are: De Lage Landen International, GE Healthcare Equipment Finance, Oak Leasing, Siemens Financial Services, and Philips Capital.

The major trends of the global medical equipment leasing market are:

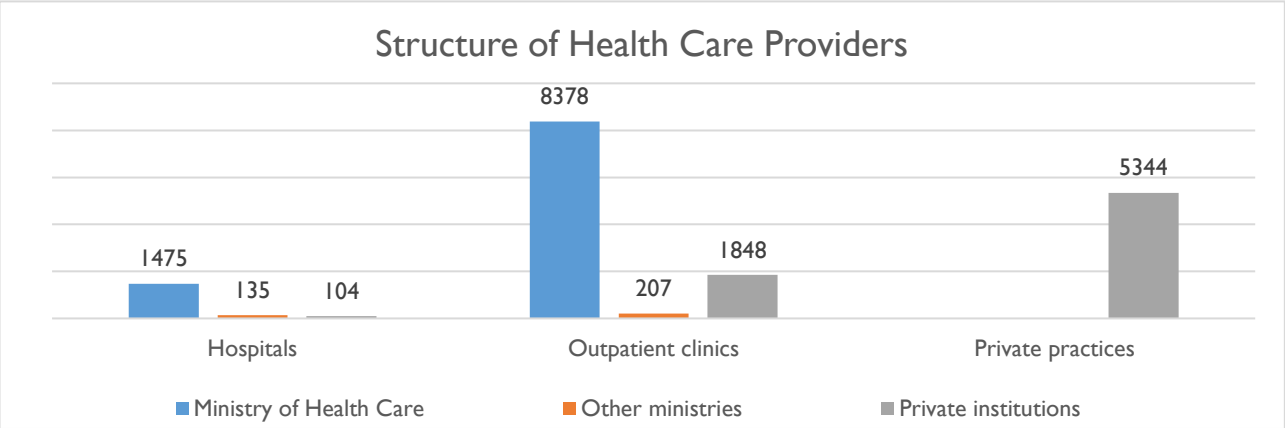
- **High medical equipment costs.** Currently, this factor is influenced by the need to comply with stringent production and operating regulations; and a significant and growing share of R&D in the product costs.
- **Private diagnostic centers and small hospitals of the SME segments are drivers of the primary leasing equipment market.** In this case, leasing is the only economically sound method to reduce one-time costs incurred by the lessee for the full cost of the leased asset, installation and high quality service. Leasing also makes it possible for the medical institution to balance long-term depreciation during the lease, with the cost of medical services to the public that are provided using this equipment (until the full settlement for the leased item).
- **Growing Durable Medical Equipment (DME) segment.** Over recent years, the share of durable medical equipment for home use has been growing (e.g., in 2016, it was 44%). Using the example of the United States as a leader of the global medical equipment market, the DME segment can be divided into three core equipment groups[16]: patient monitoring and therapy devices for home use (a dominating segment); personal mobile medical devices (a growing segment, an actual share is about 8-10%); safety devices for bathroom and medical furniture (a slowly growing segment, an actual share is about 1-3%).
- **Second-hand medical equipment market recovery.** The cost of repaired equipment is 6 to 7 times less than the cost of the new one[17]. Hospitals and medical diagnostic centers of the SME segment increasingly prefer such equipment even to leasing, provided that the service company guarantees nominal performance of the equipment and its service support over its full useful life.

[16] https://www.grandviewresearch.com/industry-analysis/us-durable-medical-equipment-dme-market

[17] https://www.researchandmarkets.com/reports/4432793/global-healthcare-equipment-leasing-market-2017#rela3-1824134

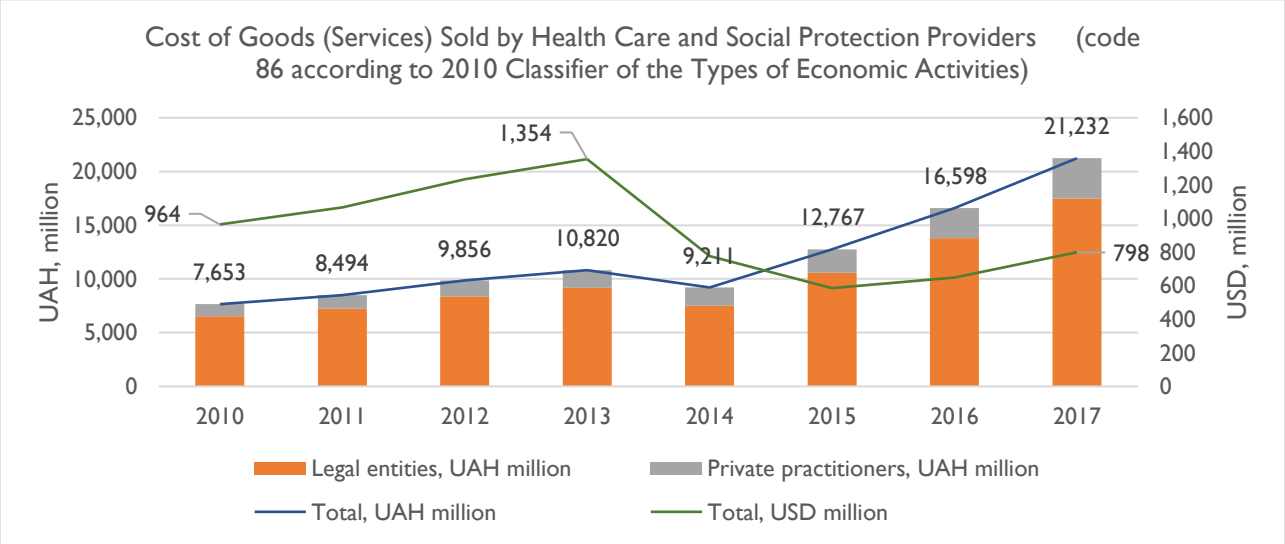
CHAPTER 2: UKRAINIAN MEDICAL INSTITUTIONS: VOLUME AND STRUCTURE OF SERVICES PROVIDED

As of January 1, 2018, there were about 17,000 medical institutions (including: 1,714 hospitals; 10,373 outpatient clinics; 5,344 private practices) in Ukraine.



Sources: Medical Labor and Network of Institutions of the Ukrainian Ministry of Health Care Guide for 2016-2017[18]

Statistical data on the volume of Ukrainian medical services provided[19] suggest that, after a critical drop in 2014 (UAH 9.2 billion), the volume of services grew at an average annual rate of 30%, reaching UAH 21.2 billion in 2017. It should be noted that the relative share of medical services provided by private practitioners was growing at the same time.

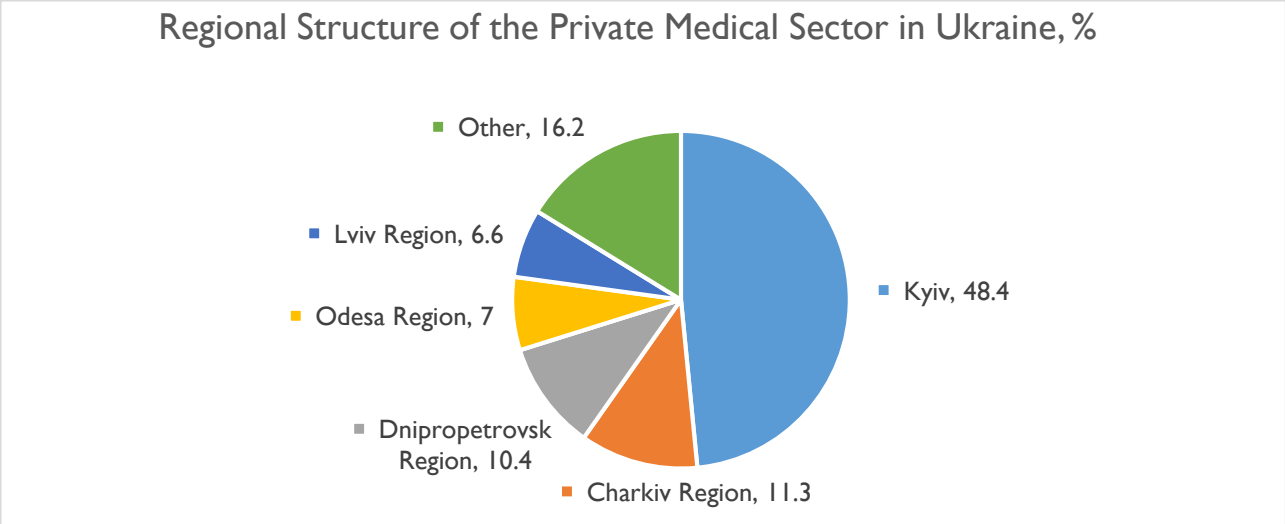


Source: State Statistics Service of Ukraine[20]

The private medical market in Ukraine is growing due to increasing demand for services, new players in the market, and greater trust in private health care. In 2016, the total cost of medical services provided in Ukraine was UAH 13.9 billion; in 2017, this indicator grew 34.3% to UAH18.7 billion.

[18] http://medstat.gov.ua/im/upload/kadry_2017.zip
[19] http://www.ukrstat.gov.ua/operativ/operativ2018/fin/pssg/pssg_u/orpsg_ek_2010_2017_u.xlsx
[20] http://www.ukrstat.gov.ua/operativ/operativ2018/fin/pssg/pssg_u/orpsg_ek_2010_2017_u.xlsx

The medical services market is concentrated in large Ukrainian cities. Kyiv dominates, with a share of 48.4%. Other top cities are Kharkiv, Dnipro, Odesa and Lviv. These are cities with high population density and economic development, which is favorable for the development of the private medical sector.



Source: Pro Consulting[21]

The current market of medical institutions includes both large systemic network universal institutions (general clinics) and small highly specialized practices (dentistry, gynecology, cosmetology, etc.). It should be emphasized that all private medical institutions are SMEs.

Selective research into the specialization of private medical institutions shows the domination of therapeutic, surgical, dentist and gynecological clinics.

NUMBER OF PRIVATE MEDICAL INSTITUTIONS BY SPECIALIZATION IN THE LARGEST UKRAINIAN CITIES

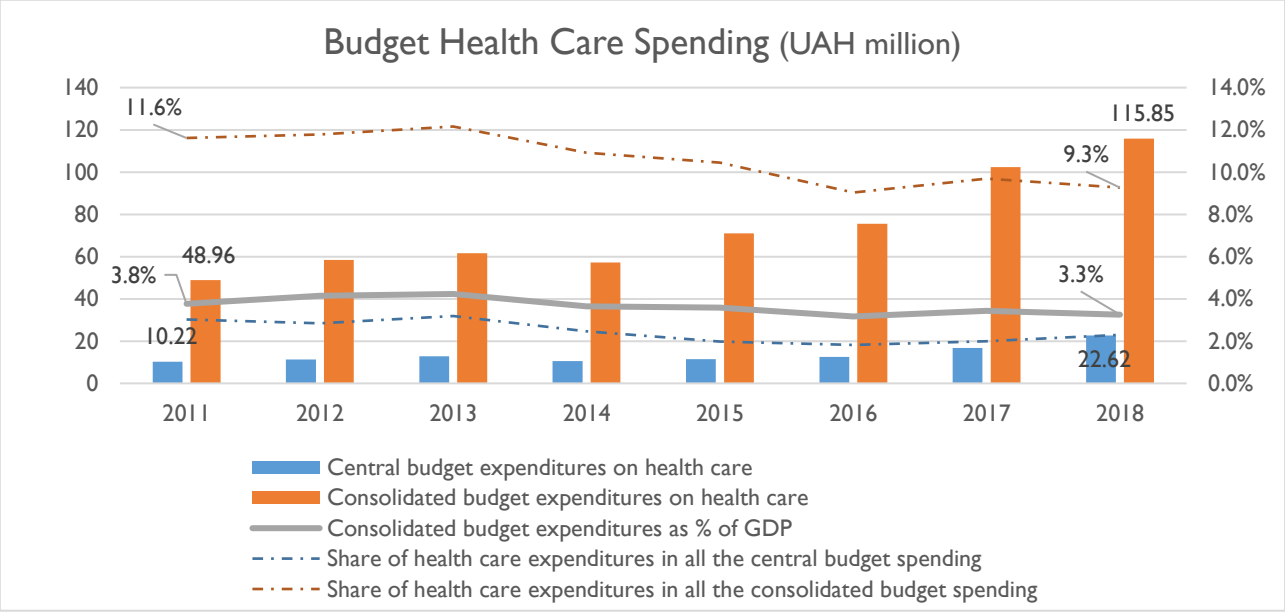
Specialization	Kyiv	Dnipro	Odesa	Kharkiv	Lviv
Therapeutics	121	18	3	14	11
Pediatrics	72	15	3	8	8
Surgery	125	13	5	17	7
Cardiology	92	16	2	15	12
Gynecology	154	21	10	16	15
Dentistry	143	26	15	33	27
Ophthalmology	65	8	2	12	7
Otolaryngology	92	15	3	10	7
Cosmetology	127	23	11	18	7
Total	600	113	89	141	80

Source: Pro Consulting [22]

HEALTH CARE SPENDING

Over the last five years, the absolute volume of health care expenditures in Ukraine has grown at all government levels. However, the budget expenditures as a percentage of GDP dropped from 3.8% to 3.3%.[23,24]

[21] Ukrainian Medical Services and Equipment Market Analysis Report by Pro Consulting
[22] Ukrainian Medical Services and Equipment Market Analysis Report by Pro Consulting
[23] https://index.minfin.com.ua/ua/finance/budget/gov/expense/
[24] https://index.minfin.com.ua/ua/finance/budget/cons/expense/

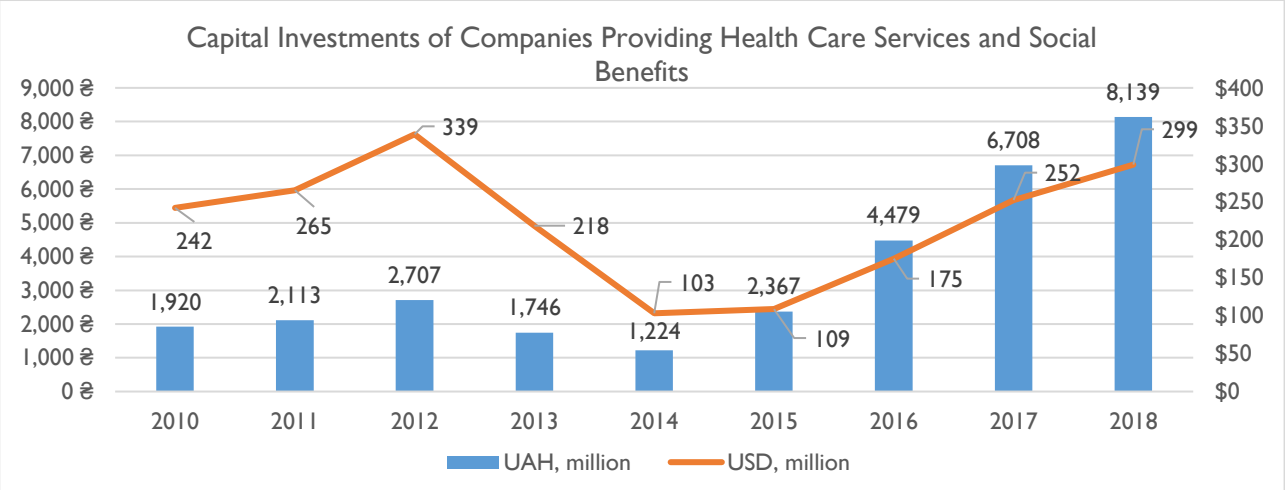


Meanwhile, average monthly spending of households on health care tripled from UAH 1,327 in 2011 to UAH 3,988 in 2018, and the share of these expenditures in total spending grew from 3.2% to 4.0%.[25]

One important source of health care funding globally is medical insurance. In Ukraine, however, this type of insurance is voluntary and its share in financing is insignificant. However, it should be noted that benefits under medical insurance agreements have been showing a steady growth in recent years. Thus, in 2003, insurance companies covered just UAH 16 million worth of costs, in 2015 – UAH 1.39 billion, in 2018 – UAH 2.01 billion[26]. Therefore, Ukrainian medical insurance and other types of insurance, directly or indirectly related to the medical sector, are becoming a more important source of health care funding that will contribute to the development of medical equipment leasing in the near future.

Capital Investments of Health Care Providers

Capital investments by health care and medical service companies increased in Ukraine during 2015 - 2018. Absolute capital investments in health care for 2018 reached the dollar equivalent of $299 million. Moreover, the trend suggests a real resumption of investments measured in foreign currency despite a drop in capital investments in 2014-2015.

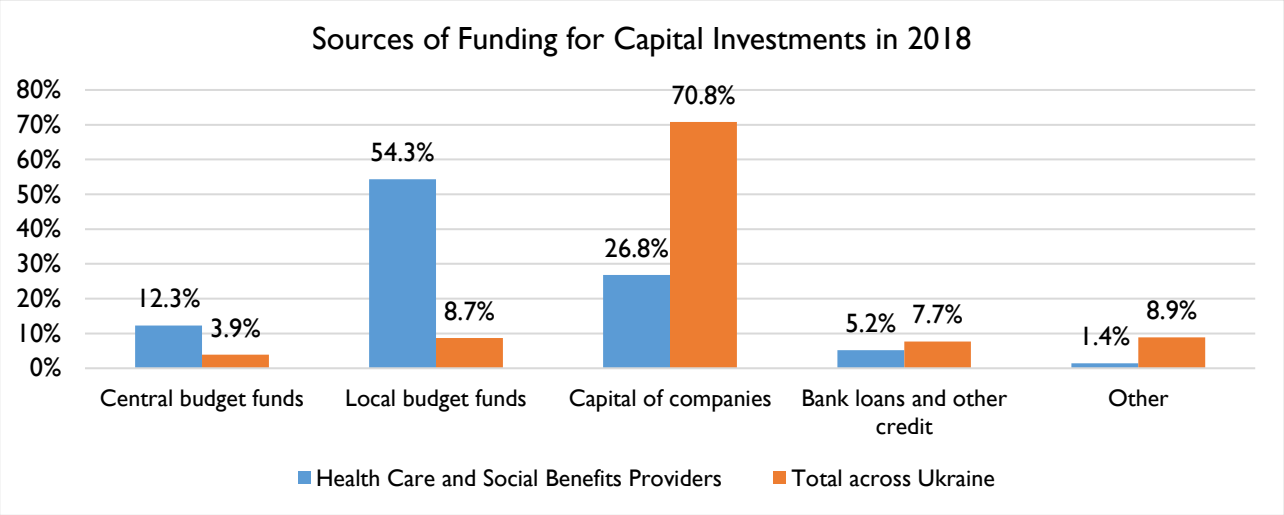


Source: State Statistics Service of Ukraine[27]

[25] http://www.ukrstat.gov.ua/operativ/operativ2007/gdvdg_rik/dvdg_u/str_vut2010_u.htm
[26] https://nfp.gov.ua/files/OgliadRinkiv/SK/2018_rik/2018/sk_%202018.pdf
[27] http://www.ukrstat.gov.ua/operativ/operativ2013/ibd/ibd_rik/ibd_u/ki_rik_u_e_bez.htm

At the end of 2017, the residual value of fixed assets owned by medical service providers was UAH 9.4 billion, and the general level of wear and tear – 45.6% (average across Ukraine – 55.1). At the same time, in 2017, fixed assets worth UAH 1.4 billion were put into operation.[28]

Limited external financing of such investments is a serious obstacle to upgrading fixed assets.



Source: State Statistics Service of Ukraine[29]

According to the State Statistics Service of Ukraine, in 2018, capital investments of all health care and social benefits providers were financed from local budgets (54.3%), own funds (26.8%) and using bank loans and other credit (5.2%). This significant budget financing is explained by a large number of state-owned medical institutions. However, data provided by representatives of private medical institutions suggest that over 70% of all capital investments had been financed from own funds.

Health Care Reform: First Results

In August 2014, the Ministry of Health Care began the development of the National Health Care Reform Strategy in Ukraine.

Several years of discussions and public debates resulted in the passage by the Parliament, on October 19, 2017, of the Law of Ukraine on State Financial Guarantees of Medical Services for the Public[30]. This decision is considered the start of health care funding reform.

The Ministry started implementing changes in health care in January 2018. The first stage of reform was the launch of a new mechanism of funding of medical institutions that provide first medical aid[31].

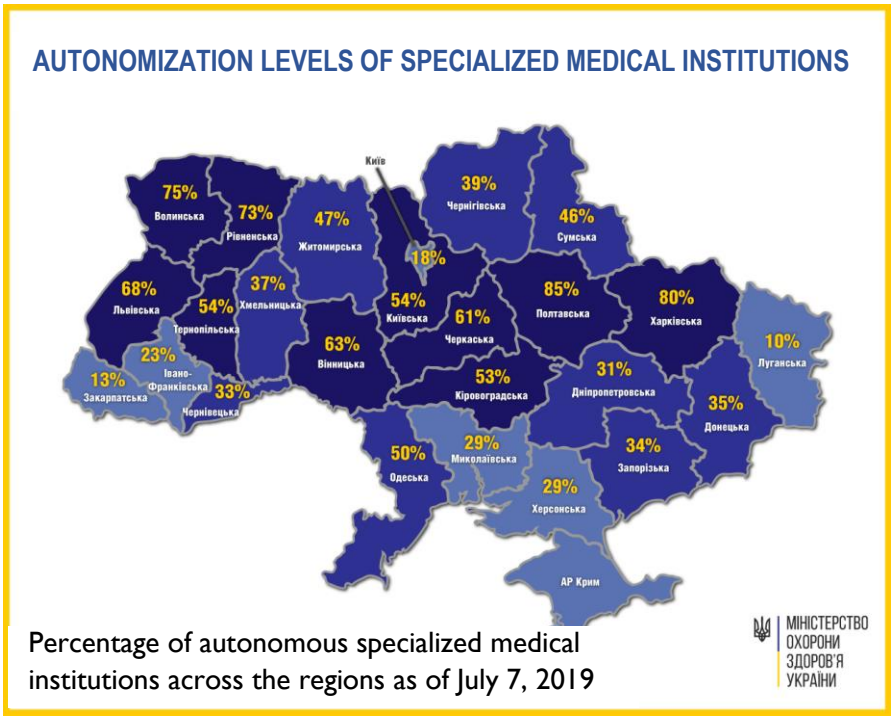
The basic components of the reform launched by the Ministry of Health Care are as follows[32]:

- **Autonomization of medical institutions.** This term means for institutions to use funds efficiently and at their own discretion (the right to use their own assets in accordance with priorities determined by institutions; the right to raise funds from domestic and foreign investors, international donors; the right to change the medical staff remuneration system).

[28] http://www.ukrstat.gov.ua/operativ/operativ2018/ibd/osn_zas_u/osn_zas_u_2017.xls
[29] http://www.ukrstat.gov.ua/operativ/operativ2019/ibd/kindj_ek/kindj_ek_18.xls
[30] https://zakon.rada.gov.ua/laws/main/2168-19
[31] http://moz.gov.ua/article/reform-plan/scho-zminilosja-za-rik-pislja-prijnjattja-zakonu-pro-medichnu-reformu--
[32] https://www.legalalliance.com.ua/ukr/publikacii/medicna-reforma-perebudova-galuzi-ta-svidomosti/

- **Free choice of one' own physician.** Preparing patients' declarations on the choice of the physician who provides first medical aid. For the first time, people can choose family physicians (therapists, and pediatricians) without any link to their place of registration.
- **Implementing the "money follows the patient" principle.** The National Health Care Service of Ukraine (NHCSU) is a central executive authority that pays for medical services actually provided by municipal, private medical institutions and general practitioners that provide first medical aid. This mechanism was finally put into operation on July 1, 2018.
- **Transition to electronic record keeping.** Creating a single electronic database for keeping patient records – eHealth – and ensuring the possibility to make controlled cash payments according to the "money follows the patient" principle.
- **Development of rural health care.** Providing guaranteed remuneration, accommodation and transport to qualified rural family physicians. Implementing telehealth for the purpose of long-distance diagnostics.

Health care reform in 2020 envisions a full transition of all municipal medical institutions of the country for all types of medical assistance to the remuneration system under contracts with NHCSU.



Percentage of autonomous specialized medical institutions across the regions as of July 7, 2019

Starting January 1, 2020, all eligible medical institutions that provide specialized medical aid will be paid under contracts with the NHCSU. Those hospitals that will not reorganize and will not sign a contract will not be able to receive funds from the central budget and will have to be funded from other sources, e.g., from local budgets.

The main strategic task of the MHC together with NHCSU in 2019 is to develop a state medical guarantee program for 2020 that, for the first time, must be approved along with the State (Central) Budget for 2020.

High-level Drivers Of Medical Sector Development In Ukraine

Current financial and economic condition of the country and health care reforms have a direct impact on medical services market trends in Ukraine. The primary trends and major development drivers of the private medical market are:

- **High quality of services provided by private medical institutions.** Unlike the public segment, the private market of medical services has highly qualified and motivated staff, as well as better medical equipment, which has a positive impact on the quality of services offered to patients.
- **Lack of qualified medical staff.** As of the end of 2017, Ukraine had 186,000 doctors, out of which just 9% or 16,700 worked for private medical institutions. The share of medical staff of the retirement age is 24.5% among doctors and 12.9% among junior staff. Coverage by doctors (without dentists) per 10,000 people was 44.1 vs. 49.3 in 2010.

- **Consolidation of market players.** This trend is caused by the expanded range of services and format offered by medical institutions, developed networks of medical centers, and mergers and acquisitions of private medical institutions.
- **Aging population and its state of health.** Ukraine mirrors the global trend of longer life expectancy and an aging population. Nonetheless, the disease prevention and healthy lifestyle promotion system is weak. As of the end of 2017, Ukrainian senior citizens (persons aged 65 and older) numbered 6.9 million (16.55% of the population), including 4.6 million women[33]. According to the data of the Ministry of Social Policy in 2018, Ukraine is in the top 30 "oldest" countries worldwide by the share of persons aged 60 and older.[34]Moreover, the percentage of older persons in the population of Ukraine is growing, from the actual of 21.8% in 2015 to the forecasted of 25% in 2025.
- **Unsatisfied demand for high quality medical services.** Access of the population to medical services is currently through the public medical sector, which provides the first line of medical services. The quality of such services is not satisfactory, and services of private medical institutions are not as available because of several factors. These include limited presence across the regions, price, and a more limited range of services than in public institutions.
- **Underdeveloped medical insurance**. Worldwide, medical insurance acts as one of the sources of funding for the medical sector, but high risks associated with current regulation of non-bank financial institutions and low level trust in insurance limit its application to Ukraine.
- **High level of initial investments to create an operational medical institution**. The private medical business has a long payback period for investors primarily because of the need for significant investments at an early stage.

[33] http://database.ukrcensus.gov.ua/PXWEB2007/ukr/publ_new1/2018/zb_dy_2017.pdf

[34] https://ukranews.com/ua/news/544138-starinnya-nacii-ukraina-opynylasya-v-trydcyatci-krain-z-naybilshoyu-kilkistyu-lyudey-starshe-60

CHAPTER 3: ANALYSIS OF THE UKRAINIAN MEDICAL EQUIPMENT MARKET

MEDICAL EQUIPMENT MARKET OVERVIEW

According to Business Monitor International (BMI Research – Fitch Group Company), the Ukrainian medical equipment market will demonstrate an annual growth rate of over 10% in hryvnia terms during 2018-2020. This growth will be driven by: new health care legislation that changes the health care financing system; an increase in the number of general clinics; expanded network of rural hospitals and cooperation between Ukraine and the World Bank. Similar trends are noted by the International Trade Administration of the U.S. Commerce Department, which forecasts that the upward trend will continue.

Since 2019, 97% of medical institutions, of which 20% of institutions are private, have made a transition to a new financing model that authorizes a newly established agency – the National Health Care Service of Ukraine – to compensate for the cost of medical services provided. In 2018, NHSCU paid out $ 128.6 million, and in January 2019 - $49.6 million.

In 2019, imports accounted for 90% of the total sales of medical equipment in Ukraine. China, the United States, Germany and Japan were the largest suppliers. The US share in the total volume of imports was 12% and almost 25% in orthopedic and prosthetic equipment. The most popular categories included: diagnostic imaging equipment (ultrasound, CT, MRI); laser surgery equipment; stents; electric simulators; other equipment used for treating heart diseases; orthopedic equipment and prosthetic devices; dental equipment and materials.

Although Ukraine has a strong research and development base, and is capable of developing advanced treatment methods and medical devices, it lacks a strong production sector. Local manufacturers offer a limited choice of equipment, such as radiological, ECG and ultrasound equipment, cooling and cryogenic equipment, specialized medical furniture, orthopedic equipment, respiratory anesthetic equipment, hearing aids, surgical and dental tools, sterilizing equipment, electric diagnostic equipment and electric simulators.

About 250 companies are engaged in developing and manufacturing medical equipment in Ukraine. Local production of medical devices was estimated at over $95 million in 2019.

VOLUME OF THE MEDICAL EQUIPMENT MARKET: CURRENT CONDITION AND FORECAST FOR 2016 – 2020[35]*

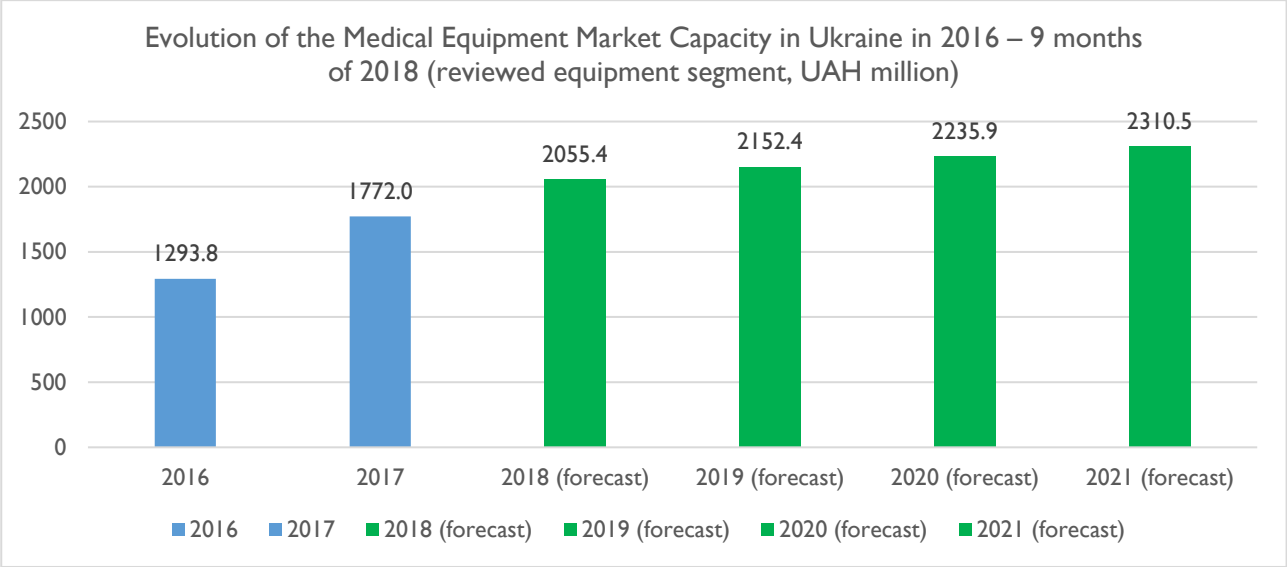
	2016 (estimate)	2017 (estimate)	2018 (estimate)	2019 (forecast)	2020 (forecast)
Local production, USD million	63.5	72.7	81.7	95.7	97.0
Export, total	29.7	30.0	33.0	36.0	42.0
Import, total	303.9	332.1	397.1	465.0	494.6
Import from the United States	32.8	39.4	55.4	58.0	60.0
Total market capacity	337.7	374.8	405.8	524.7	549.6
Exchange rate: USD 1	UAH 25.55	UAH 27.2	UAH 29.3	UAH 29.5	UAH 30.8
Total market volume = (Total local production + Total volume of import) – (Total volume of export)					
Source: national sources/BMI; Total volume of import and import from the United States: TradeStat Express.					
* There is no reliable statistics on the medical equipment market					

[35] https://www.export.gov/article?id=Ukraine-Medical-Equipment

Volume Of The Medical Equipment Market (Sample-based) In Ukraine

A detailed analysis[36] of the medical equipment market (sample-based[37]) contains the following information about the Ukrainian medical services markets.

According to the estimates[38], market capacity in 2017 was UAH 1,772.02 million, which is up 37.0% compared to 2016. This increase was caused by the country's economic stabilization, medical reform and upgrading of facilities and equipment. Further growth is expected due to the upgrading of facilities in state-owned clinics, expansion of existing private clinics or the emergence of new players.



Source: Pro-Consulting's estimates

Therefore, if the observed trends remain unchanged, the medical equipment market is expected to grow in the future.

Medical Equipment Imports

One of the distinctive features of the medical equipment market in Ukraine is its dependence on imports. It is difficult for Ukrainian manufacturers to compete with international companies, because local producers lack financial resources for business development and scaling, as well as for investments in their own technological research and development of innovative equipment.

Medical reform has an impact on the development of the medical equipment market in Ukraine. An important factor is the adoption of CMU resolutions regarding new technical regulations (753, 754, 755), which prescribe how medical equipment will be put into operation in Ukraine. Before this regulation became effective, untested devices were brought into Ukraine from China under the guise of original products made in the United States and Japan. These regulations apply to all medical equipment restored outside Ukraine. In accordance with the new regulation, if a manufacturer is not a Ukrainian resident, it must appoint an authorized representative in Ukraine that will be responsible for bringing imports into Ukraine.

[36] Research is based on processing secondary information sources that include data of official agencies in Ukraine (State Statistics Service in Ukraine, Ministry of Health Care of Ukraine, legislation, published reports of think tanks, publications in mass media, information from different databases).

[37] In preparing the report, in accordance with the scope of work, our research covered the following equipment: diagnostic imaging equipment (CT; MRI; molecular imaging; medical IT; X-rays; ultrasounds; densitometers; colposcopes; patient monitors; ECG devices; Doppler analyzers); therapy (shockwave and laser); cosmetology: laser and machine cosmetology); dentistry (dental sets; compressors and aspirators; sterilizing equipment); physiotherapy: (electric therapy; ultrasound); furniture for hospitals (gynecological examination chairs; ENT-chairs; operating tables; dialysis chairs; medical lamps; phlebology tables).

[38] Market capacity was estimated based on production, export and import data for devices under review.

Currently, to bring medical equipment to Ukraine, it is required to check it for compliance and obtain a national certificate along with the international certificate (in accordance with CE marking system (Conformité Européenne)).

The medical equipment conformity verification procedure has changed. It is consistent with European directives and entails additional expenses (including pre-clinical trials). As a result of these efforts, a national conformity certificate is issued. The extent of verification depends on the class of medical hardware to be imported in Ukraine. National conformity certificates are valid for five years.

The problem of duplicating conformity verification and obtaining the conformity mark should be resolved along with final harmonization and mutual recognition of the agreement in the area of manufactured goods in accordance with the Association Agreement between Ukraine and EU. However, there is another way to obtain the conformity mark – conformity verification by means of assessing the quality management system. It is done as an on-site inspection of medical equipment producers by a certification authority.

In addition, the cost of reimported restored equipment exceeds the reasonable cost due to customs fees charged whenever the border is crossed.

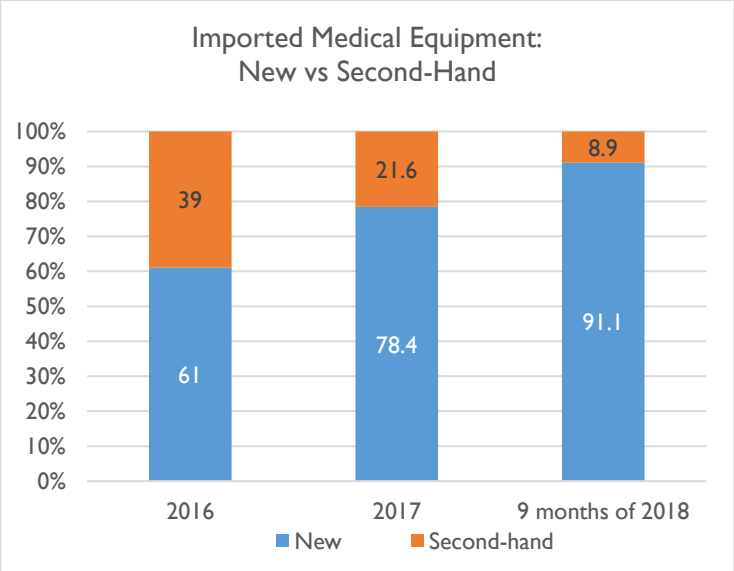
For the first 9 months of 2018, Ukraine imported UAH 1.8 billion worth of equipment, compared to UAH 1 billion for the entire year of 2016. Medical furniture is the largest item in the import structure. Its share ranges between 50 and 59 percent. The second largest item is diagnostic equipment. The smallest items are therapeutic and physiotherapeutic equipment. Their share was between 0.5 and 2 percent.

MEDICAL EQUIPMENT IMPORTS IN KIND IN 2016 – 9 MONTHS OF 2018, NUMBER OF ITEMS

Segment	2016	2017	9 mos of 2018	Segment	2016	2017	9 mos of 2018
Diagnostic imaging							
CT	56	66	27	Densitometer	10	1	8
MRI	20	28	11	Colposcope	13	7	1
Medical IT	349	687	303	Patient monitors	4194	7015	1524
X-rays	668	881	804	ECG devices	2716	3420	627
Ultrasounds	667	536	594	Doppler analyzers	9	20	15
Therapy							
Shockwave	163	46	5	Laser	11	9	19
Cosmetology							
Lasers	143	254	42	Machine	823	930	709
Dentistry							
Dental sets	2072	1891	2440	Sterilizing equipment	1030	2908	1598
Compressors and aspirators	538	952	593				
Physiotherapy							
Electric	391	341	82	Ultrasound	8	60	16
Medical furniture							
Gynecological examination chairs	82	97	71	Operating tables	92	197	187
ENT-chairs	15	10	11	Medical lamps	1014	1046	1809
Dialysis chairs	38	112	15	Cosmetology chairs	678	430	313
Furniture for clinics	17827	18319	11664				
Total imports, UAH mn	**1 001**	**1 306**	**1 800**				

Source: State Statistics Service, Pro-Consulting's estimates

Medical Equipment: New vs Second-hand



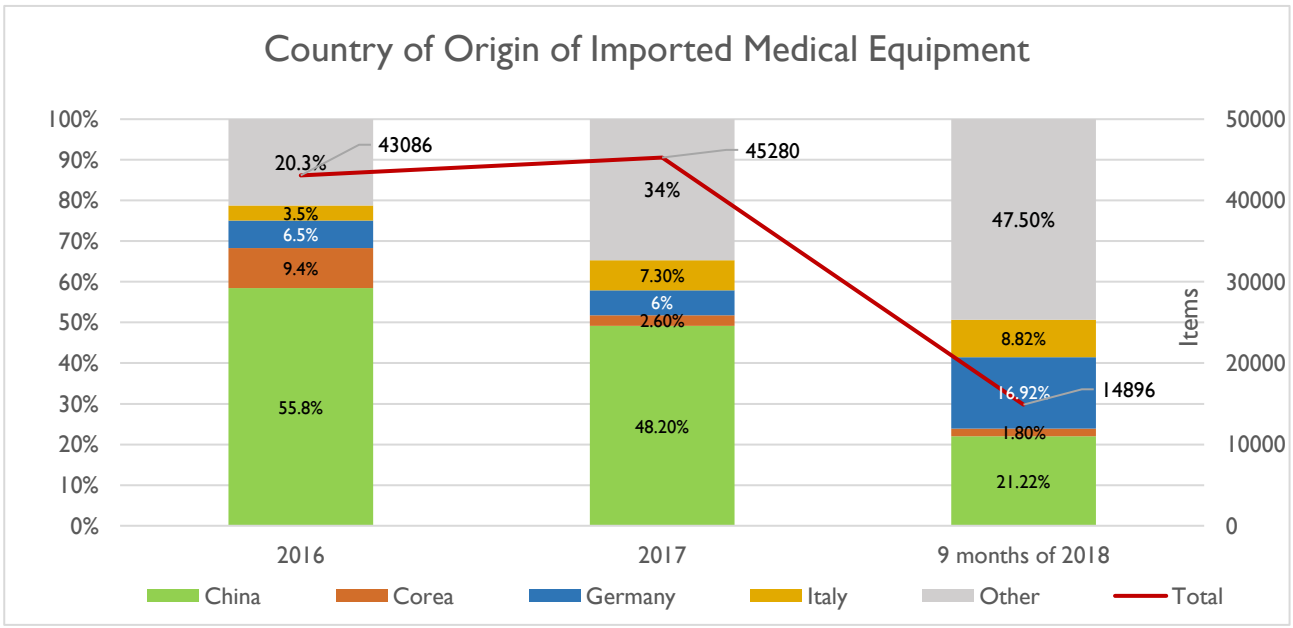
The analysis of the volumes of new and second-hand medical equipment reveals that the share of second-hand equipment is on a downward trend. One of the reasons for a decrease in the use of second-hand equipment is the introduction of new regulations designed to prevent second-hand low quality equipment that is dangerous and inefficient from entering the market. Another reason is the growing confidence of medical services market players in their businesses and future revenues, bolstering their willingness to make larger investments in more effective state-of-the-art equipment.

Source: Pro-Consulting's estimates

Key Supplier Countries And Their Shares In The Delivery Structure

The leader among suppliers of medical furniture and devices is China. China's products have the lowest price but also the shortest period of use before maintenance and/or the lowest effectiveness. Other major suppliers are Korea, Germany, Italy and the USA. Their devices are more effective and cost more.

Over the last three years, China's market share was as follows: 2016 – 55.8%; 2017 – 48.2%; 9 months of 2018 – 21.2%). The table below provides data on market shares by major supplier countries in Ukraine.



Source: State Statistics Service, Pro-Consulting's estimates

Brands Of Imported Equipment

There are many brands of medical equipment in the Ukrainian market. The percentage of a particular trademark in the import structure is determined by its inventory management policy, because medical equipment can be stored for a long time and deliveries will be made as needed.

In addition to the brands shown below, such trademarks as TOSHIBA (now – Canon), Philips, and Siemens were also brought to Ukraine. These were high-priced goods. They included such devices as MRIs, CTs, and ultrasounds. However, since the segmentation by trademarks was based on the number of devices/furniture items brought into the country, the share of these trademarks in imports was less than 1%.

Trademarks of Medical Equipment Imported in Ukraine

2016			2017			9 months of 2018		
TM	Share	Number of items	TM	Share	Number of items	TM	Share	Number of items
Heaco	25,4%	3785	Contec	7,0%	3037	Invacare	4,4%	2000
BIOMED	8,7%	1295	Biomed	6,2%	2653	Tecnodent	3,5%	1579
Granum	2,8%	418	Langfang Sunon	5,0%	2148	Chaohui	3,3%	1516
Vitiaz	2,6%	382	Heaco	2,9%	1269	Famed	2,4%	1082
Mindray	2,3%	343	Diplomat	2,5%	1063	Linet	2,3%	1037
Mortara	1,9%	284	Beijing Choice El. Tech.	2,3%	1000	Medicare	2,2%	1000
Beauty Service	1,7%	260	Medicare	2,3%	1000	Granum	1,8%	800
Ajax	1,6%	236	Chaohui	2,2%	958	Insausti	1,7%	781
Radius	1,5%	219	Ceracarta	2,2%	936	Medin	1,5%	700
Others	51,5%	7674	Others	67,4%	29022	Others	76,8%	34785

Source: State Statistics Service of Ukraine[39], State Fiscal Service of Ukraine[40], Pro-Consulting.

Key Importers Of Medical Equipment

Ukraine's medical equipment market has a large pool of importers. They are all private companies. There are no medical clinics among top importers, which suggests a very structured market and highly specialized participants. Most importers perform a distribution function as well.

Market research showed that the current business model of importers and, at the same time, distributors of medical equipment is very uniform and standardized:

- Choose business partners outside Ukraine (manufacturers, global vendors of medical equipment); establish a business relationship with them and enter into delivery contracts for specific brands; obtaining the status of an official importer in Ukraine;
- Establish a business relationship with Ukrainian medical institutions (ultimate buyers of equipment); implement a marketing strategy based on specific world brands of medical equipment; set the terms of equipment delivery and cash settlements;
- Participate in bidding for contracts on medical equipment deliveries to state-owned medical institutions (statistically, the state-owned buyers of equipment account for 30 to 90 percent of the business of large equipment importers);
- Deliver, provide customs clearance, install equipment (if necessary, the importer can perform design work for adaptive installation of medical equipment in the medical institution);
- Provide operational training to the service staff of the medical institution;

[39] http://www.ukrstat.gov.ua/operativ/operativ2017/zd/e_iovt/arh_iovt2017.htm
[40] http://sfs.gov.ua/ms/

- Provide warranty and post-warranty support and repairs of equipment (this option is required for doing business and implemented based on the breakeven/minimum profitability principle for the importer. These costs are included in the price of equipment and account for 5 to 10% of the total price);
- Upgrading and modification of the installed equipment should be done by importers solely in accordance with the policies of world leading manufacturers and global distributors – business partners for the specific equipment brand.

Importers state that 70-80% of buyers (private medical institutions), when entering into the medical equipment delivery contract, ask sales people to arrange financing or postpone payments or use a finance lease instrument. The main reason is the lack of working capital and poor accessibility of bank loans in this industry.

Standard terms of settlements for medical equipment with a private medical institution are as follows: a down payment of 25 to 50 percent of the price; the remaining amount is paid by equal monthly installments during three to six months, at most, after the delivery and installation of the equipment. The importer allows the medical institution to postpone payments if there is similar trade credit, in terms of the period and value, from a world leading manufacturer or a global importer.

Some importers have launched medical equipment leasing programs in cooperation with lease companies and banks. However, such programs are rare and the exception rather than the rule. Medical institutions prefer such programs to other terms of settlements.

RECIPIENT COMPANIES BY TYPE OF EQUIPMENT AND VOLUME OF IMPORTS IN THE SECTOR DURING 2016 – 9 MONTHS OF 2018, UAH MLN.

Company	Area of activities	Vendors	2016	2017	9 months of 2018
Diagnostic imaging					
Medgarant, Ltd.	Distributor	PODOSKER ENTERPRISES LIMITE, Samsung Medison CO., InMed s.r.o., FlexRay Medical	26 526,2	4 512,6	219 265,3
Protect Solutions Ukraine, Ltd.	Distributor	RELANA Spedition und Logistik GmbH, Geis PL Sp z o o	67 891,7	73 479,5	60 349,2
Med Exim, Ltd.	Distributor	Medlogistics GmbH., NANJING PERLOVE MEDICAL EQUIPMENT CO.	38 400,2	71 744,0	22 205,1
Inmed, Ltd.	Manufacturer	InMed s.r.o.	-	42 434,1	80 564,6
Zdravo, Ltd.	Importer	LEGENDE INDUSTRIAL. GO., LTD, BIOMEDICAL INSTRUMENTS XIAOPAN, "Contec Medical Systems Co. Ltd"	61 297,6	30 637,9	28 866,8
Cosmetology					
Biodent Ukraine, Ltd.	Distributor	IKR Sp.z.o.o.	-	4 325,07	2 950,02
Beauty Service Ukraine, Ltd.	Manufacturers under their own trademark that use production facilities located in other countries	Dongguan Yirenmei Electric Co.,Ltd, Yimei Beauty Limited	636,05	2 331,63	787,80
Cosmo Trade, Ltd.	Importer	CUTERA Inc, MERZ PHARMA	-	-	2 568,40
Avant med, Ltd.	Distributor	Wavemed SRL, Leazeir Medical Light S.L.	832,75	1 059,67	-
Afrodita, Ltd.	Importer	GMV S.R.L.	-	401,64	1 087,15
Medical furniture					
Servicesmed, Ltd.	Importer	EJKO Sp.z o.o., LINET spol. s r.o.	2 318,21	51 715,15	21 115,94
Ksenko, Ltd.	Distributor	IKR Sp z o, INTERMED INNOVATIONS LTD, TRILUX Medical GmbH & Co.Kg	3 290,98	24 048,43	19 004,60

RECIPIENT COMPANIES BY TYPE OF EQUIPMENT AND VOLUME OF IMPORTS IN THE SECTOR DURING 2016 – 9 MONTHS OF 2018, UAH MLN.

Company	Area of activities	Vendors	2016	2017	9 months of 2018
Biomed, Ltd.	Importer	JiangSu Rixin Medical Equipment Co, Shandong Yuda Medical Equipment CO LTD, JIANGSU RIXIN MEDICAL EQUIPMENT CO.	3 112,26	27 375,14	11 432,37
Techmed Cardio, Ltd.	Importer	LINET SPOL S.R.O.	-	3 406,21	36 191,38
Azaris Trading House, Ltd.	Importer	SUKCES SP Z.O.O., Entrydell S.A.	484,32	31 778,66	1 151,85
Dentistry					
Ukrmedmarket Firm, PE [private entity]	Distributor	"EUR-MED Slovakia, Ltd", Guangzhou Ajax Medical Equipment Co.Ltd, Tecno-Gaz S.p.A.	23 441,78	27 075,56	28 479,76
Ukrmed dental, Ltd.	Distributor	Cefla S.C., Zhejiang Getidy Medical Instrument Co.,Ltd.	15 325,50	27 905,78	19 966,01
BMT UA, SE [state-owned entity]	Distributor	BMT Medical Technology, s.r.o.	7 795,35	25 223,57	82,64
GALIT, PE	Manufacturer	'DURR DENTAL' AG, EKOM spol.s.r.o., MELAG Medizintechnik oHG	7 935,26	5 726,00	12 404,98
Inspe, Ltd.	Distributor	MELAG Medizintechnik oHG, "Cefla SC - Cefla Dental Group"	6 599,82	11 557,31	7 010,32
Therapy					
Medgarant, Ltd.	Distributor	CS Logistik (Deutschland) GmbH	12 012,97	25 332,10	1 286,41
Rexaflex, Ltd.	Distributor	STORZ MEDICAL AG	4 905,65	8 661,47	865,51
RMED, Ltd.	Importer	EKOPEL MED, EkoPel d.o.o.	-	3 143,19	1 226,72
BTL-UKRAINE, Ltd.	Distributor	BTL Industries Ltd.	419,26	-	3 853,25
Tsimmer Medisin System Ukraine, Ltd.	Distributor	ICS Logistik (Deutschland) GmbH	-	2 765,98	-
Physiotherapy					
BTL-UKRAINE, Ltd.	Distributor	BTL Industries Ltd.	10 228,07	12 639,99	11 394,05
BIOMED, LTD.	Importer	CLARE, LTD., Shenzhen Dongdixin Technology Co., LTD.	3 519,88	3 833,60	1 659,32
MED EXIM, LTD.	Distributor	"MEDLOGISTICS" GmbH c/o Altrimo AG"	1 046,82	3 287,18	-
EXIM LOGISTICS, LTD.	Importer	MEDLOGISTICS GmbHc	-	-	2 701,70
Tsimmer Medisin System Ukraine, Ltd.	Distributor	ProMT, ICS Logistik Deutschland	507,18	-	1 969,71

Source: State Statistics Service of Ukraine, Pro-Consulting's estimates

CHAPTER 4: MEDICAL EQUIPMENT LEASING IN UKRAINE. RISK ASSESSMENT. RECOMMENDATIONS.

The use of leasing in health care can significantly speed up the development of this industry in Ukraine. Moreover, leasing can help stabilize Ukraine's health care market as it provides speedy and accessible funding for medical institutions, including MSMEs.

Nevertheless, the industry has challenges and impediments to overcome:

- Weak financial positions of new medical institutions as lessees
- Lack of long-term Hryvnia financing of leasing programs.
- Low level of banks' and lease companies' awareness of medical equipment as a potential market by leasing companies.
- No partner programs between lessors, manufacturers, medical institutions and insurance companies
- No transparent medical equipment market, especially for second-hand equipment
- Unfavorable investment climate in Ukraine that slows down the emergence of global players in the medical equipment production sector
- Lack of capital and business development strategies of lease companies
- Lack of business interaction between manufacturers, lease companies, and medical clinics because of the underdeveloped medical insurance system

RISKS INHERENT IN MEDICAL EQUIPMENT LEASING

When considering the opportunities for lessors in the medical equipment market, it is necessary to understand key risks inherent in this financial instrument. Based on current research and the survey of market participants, the following risk factors are important to consider:

(1) **Equipment price increase risk.** Most items of medical equipment are imported. Accordingly, sellers fix their price by linking it to stable currencies (US dollar, euro), trying to hedge the currency risk. If the hryvnia depreciates, the lessee will be exposed to the risk of a significant increase in the equipment price. **Risk mitigation solutions:** Risk sharing by market participants (manufacturer, lessor, lessee, insurance company) based on partner programs; shorter lease terms; larger down payments; taking out insurance against currency risks.

(2) **Cash flow risk.** A significant decrease in the number of customers of medical institutions coupled with declining patient solvency may lead to a critical drop in cash inflows of a health care provider, and, accordingly, to the worsening of its financial position and inability to pay for the lease. **Risk mitigation solutions**: Availability of lessee's own capital; adequate forecast of the cost and volume of medical services provided using a leased asset that are a source of lease payments

(3) **Equipment obsolescence risk.** Rapid advancement of technology and digitalization may lead to the situation when the real term of leased asset depreciation will substantially exceed the term of technical\technological obsolescence of medical equipment. **Risk mitigation solutions:** A well-thought out estimate of the obsolescence term; contractual warranty from the manufacturer/lessor regarding the possibility of upgrading/improving equipment; shorter lease terms

(4) **Operational risk.** Low qualification of medical staff that maintains and operates medical equipment may prevent the full use of all the advantages of the medical equipment or even lead to a failure of the sophisticated technical equipment. **Risk mitigation solutions:** High original qualification and regular training of the staff; equipment diagnostic systems provided by the manufacturer.

(5) **Specialized installation risk.** A wide range of medical equipment requires engineering design solutions for its installation on a specific site. Accordingly, it is practically impossible to dismantle such equipment and reuse it in a different place. **Risk mitigation solutions**: Standardization of equipment and its installation means; an additional in-depth review of the lessee's financial position; accepting such type of agreements solely with customers that have well-known brands and a strong financial position.

(6) **Equipment liquidity risk.** One of the factors that encourages the lessor to be active in selling leasing products is equipment (leased asset) liquidity in the secondary market. Medical equipment has certain special features (compliance with ratings; certification; availability of post-warranty support, etc.) that may result in low liquidity of the equipment. **Risk mitigation solutions:** Creating a transparent market of second-hand medical equipment and establishing a transparent structure of its participants; availability of certified companies that provide technical renewal services for medical equipment (by brand) in accordance with its original ratings

(7) **Equipment ownership risk.** During the term of the agreement, the lessor will retain the ownership of a leased asset, regardless of whether it uses the equipment or not. **Risk mitigation solutions**: A transparent and legally reasonable lease agreement that sets out the conditions of the transfer of the ownership of a leased asset from the lessor to the lessee.

Ten Key Requirements For The Medical Equipment Lessor

(1) Have a license to provide financial lease services and full-time staff trained to carry out leasing business activities professionally. In addition, a lease company must hire experts that hold medical degrees or have professional knowledge of medical equipment (as staff members or on a contract basis).

(2) Have adequate technical capacity for an on-line customer database, and computerized lease transactions (lease application system; a lease offer calculator; a systematized list of brands and types of medical equipment for leasing; a computerized system for primary review of the lessor's financial position).[41],[42]).

(3) Have a risk management and/or scoring model (MSME customer segment) for assessing the lessor's financial position in the health care sector.

(4) Enter into long-term contracts with medical equipment manufacturers/vendors (a deferred payment option; a buy-back option; availability of warranty maintenance and repair services; a technical upgrade option for equipment after a long operating period).

(5) Organize an in-house repair shop or establish partner relations with specialized medical equipment service centers to maintain equipment in an adequate technical condition and for a possible remarketing procedure.

(6) Have experience cooperating with insurance companies that are active in the health insurance sector (equipment insurance; partner programs with insurance companies and medical institutions; the use of available financial resources of insurance companies for lease transactions).

(7) Organize business relations with lessee medical institutions: systemic training of the medical staff in the medical equipment operation rules; to build up future demand, regular communications with clinical specialists and physicians who use medical equipment in the course of their activities.

(8) Develop in-house collection management or contractual relationship with independent collectors who work in the medical services and health care market (ensuring high-quality and speedy remarketing of medical equipment). Interaction with second hand medical equipment market participants.

(9) Have a methodology for renewal and testing of medical equipment, compliance certificates, and permits for the purpose of reusing the equipment.

(10) Enter into contractual relations with banks working with health care and medical service customers. Take professional approaches in organizing the financing of health care and medical service market participants (lending transactions and lease products).

[41] https://www.crestcapital.com/catalog/health_and_medical_equipment_financing

[42] https://www.advantageplusfinancing.com/applications/loan-application-online/

CONCLUSIONS

The market for medical equipment will continue to expand globally and in Ukraine over the next five years. This conclusion is supported by both global and Ukrainian trends that we have discussed in detail in Sections 1-2. The medical equipment market is gaining momentum in Ukraine (imports reached UAH1.8 billion in the first nine months of 2018). However, the sustainable growth of the medical market requires financing, and leasing is a good option.

Key players in the Ukrainian health care market are:

- Medical equipment vendors/distributors, including well-known international companies;
- Private medical institutions interested in efficient medical equipment;
- Leasing companies interested in sources of funding and subsequent financing of medical equipment purchases by companies, as well as willing to develop cooperation with vendors/sellers of such equipment.

Most private companies working on the medical equipment market in Ukraine are small and medium-sized entities. The total volume of health care services provided in 2017 reached about UAH 18.7 billion, (in the first three quarters 2018 the total was about UAH 15,9 billion). The total volume of medical equipment market in the first three quarters 2018 was about UAH 2 billion, with medical equipment leasing being at the early stage of development (the medical equipment leasing portfolio in 2018 was UAH 218,6 million).

SMEs, as medical service market participants in Ukraine, have a common problem: lack of access to finance for active expansion. Bank loans are hard to get and expensive, the domestic capital market is shallow, and there is a limited choice of instruments to raise investment capital.

As a result, a survey of market participants indicates that, in recent years, Ukrainian medical businesses have used their own working capital for medical equipment purchases. However, to expand their own business, they are now increasingly looking for outside funding.

Vendors/distributors do offer installment payment plans for medical equipment purchases, but their capital is limited and this is only a partial solution. They are interested in cooperating with companies that are ready to offer finance leases to their customers now and operating leases in the future.

In addition to the issues raised above, ensuring access to finance for leasing companies themselves under the conditions of a limited domestic capital market and expensive bank loans remains critical.

Efforts to increase access of Ukrainian leasing companies to finance should focus on the following areas:

(1) **First, international financial organizations (IFOs) active in Ukraine should be encouraged to expand new and existing financing facilities for SMEs to include leasing as a financing option. The medical equipment market is a good candidate for access to leasing finance via dedicated IFI credit lines**.

IFO (EBRD, EIB, KfW, World Bank) programs for Ukraine, set up to encourage the development of the Ukrainian economy, cover only partially lease financing, and these are mainly intended for the Ukrainian agricultural sector. For example, in 2017-2019, the only leasing company able to borrow from KfW, EBRD and IFC was OTP Leasing Ukraine, part of the OTP bank group. As a result, the leasing company is expected to raise over $100 million under lending programs for SMEs in such segments as agriculture and sustainable energy generation.

To increase access to finance for the financial leasing market as a whole, it is essential to change several restrictions (including legal, regulatory, and financial restrictions), so that that leasing companies become eligible. For instance, in the case of a financial agreement between EIB and Ukraine regarding the Main Loan for Agricultural Sector – Ukraine Project, only banks are eligible participants. This is because of MOF requirements for leasing company solvency verification and additional collateral from them (like access to bank guarantees). Furthermore, under credit lines

of other IFOs, according to our estimates, leasing companies and/or bank groups to which they belong must undergo "know your client" (KYC) procedures and assume a number of covenants, as well as other obligations regarding corporate governance, reporting, etc.

The Law on Amending Certain Laws Regarding the Improvement of Functions of State Regulation of the Financial Services Market (No.79-IX), passed in September 2019, is supposed to increase transparency, reliability, and efficiency of the non-bank financial sector, thus lifting the above restrictions. Therefore, to further increase access of leasing companies to IFO financing instruments, it is necessary to coordinate efforts of international financial organizations, donors, the Ukrainian Government, the market regulator and participating companies to lift all technical restrictions until the end of the transition period, i.e. by July 2020 at the latest. It is also important to consider opening specialized credit lines to finance medical equipment leasing.

(2) **Second, it is important to seek the involvement of such international financial institutions as the U.S. Ex-Im Bank and OPIC (recently transformed into International Development Finance Corporation)to implement leasing finance projects (including medical equipment leasing).**

These organizations have experience with such projects and are interested in providing guarantees for investors or even providing loans directly. The International Development Finance Corporation no longer requires a direct connection to a US firm for it to provide a guarantee. The main requirements are to demonstrate the soundness of the project, meet the criteria of social impact (SME, Healthcare, alternative energy, etc.), and provide information indicating the company is a solid business (registered, transparent, sound financials, accounting and auditing, etc.).

(3) **Third, leasing company funding requires the use of different forms of financial instruments on the Ukrainian market.**

Taking out consortium loans, revolver credit lines, issuing bonds – this is a far-from-exhaustive list of instruments that can be used to diversify a loan portfolio and increase financial inflows.

Furthermore, securitization is an option to be considered as it offers an organized and structured way for institutions to raise funds against very specific assets, with repayment tied just to the performance of those assets. This allows an institution to increase its cash today for business expansion without incurring more debt on its accounts.

Securitization/special purpose vehicle is not possible under Ukrainian law at this time.However, the proposed new legislation on the organized trading market - Draft Law #2284 on Amending Certain Laws of Ukraine Regarding the Simplification of Attracting Investments and Implementing New Financial Instruments - currently before the Rada provides for the introduction of derivative instruments, which will spur the further development of the asset securitization market.

(4) **Fourth, designing government support programs, guarantees and incentives for medical services market development.**

Government support would ensure that people have access to high quality medical equipment, and that the financial burden on medical institutions in acquiring this equipment is reduced. Incentives can be related to taxation (accelerated depreciation, tax benefits transfer vehicle, tax exemption) or investments (subsidies, government guarantees).
Given the social component of medical equipment market development, it might make sense for leasing companies to emphasize the benefits they could bring to the market if they had access to capital.

(5) Development of vendor finance through partnership programs between leasing companies and medical equipment vendors.

The current situation of the Ukrainian medical equipment market suggests that there is a good opportunity for Vendor Finance.

Vendor Finance is a partner program between a leasing company and a vendor to provide the vendors with a financing/leasing solution to close more sales. Under Vendor leasing, vendors can focus on selling equipment, not managing financing programs. Vendor finance decreases the price for the end-user by means of the market support in a form of subsidies, blind discounts, risk sharing, etc. This makes a lease offer more affordable for the customer. Moreover, since the customer does not spend cash on equipment, it can spend it on other strategic business components, such as personnel, training, etc., and this will improve cash flow.
Vendors/distributors will also benefit from vendor finance, as it increases sales, shortens sales cycle and ensures fast and reliable revenue. The leasing company will pay the purchase price up front.

Vendor finance does not exist in Ukraine (although it is common elsewhere) and there are some issues that would need to be addressed. Due to the market situation and the issue of medical equipment liquidity, a key cooperation factor is the availability of vendor/distributor remarketing support (sale-back, first loss, etc.) if risks occur.

A related issue is the limited secondary market for medical equipment. In particular, there are legal obstacles to restore equipment to factory performance specifications, repair and import/export spare parts, etc. Customs fees for taking equipment out of the country and then bringing it in again increase the price for restoration outside Ukraine to such an extent that it is not cost effective. The same is true about the cost of repairs – it goes up even if the repairs are done in Ukraine, once again, due to the payment of customs fees for spare parts. A comparable impact on the secondary medical equipment market is produced by avoiding customs procedures when such equipment is imported and undergoing conformity verification procedures. The existing system of medical equipment certification and compliance using the medical institution accreditation procedure is designed to resolve this problem; whereas, to solve the medical equipment repair cost and restoration problem, customs legislation should be amended. It is also important to avoid the need for repeated certification in Ukraine if the CE conformity mark (***Conformité Européenne***) is present; all the more so, as such practices are already used in the market for medical equipment procurement for central budget funds.

Thus, a key growth driver for the medical equipment leasing market is access of leasing companies to outside finance and special purpose financing from government programs and international financial agreements; therefore, it is worth focusing on the above areas.