LEGAL REGULATION OF THE PRODUCTION AND TRADE OF MEDICAL DEVICES AND MEDICAL EQUIPMENT IN THE EU AND US: EXPERIENCE FOR UKRAINE

REGULACJE PRAWNE PRODUKCJI I SPRZEDAŻY WYROBÓW MEDYCZNYCH I WYPOSAŻENIA MEDYCZNEGO W UE ORAZ USA: DOŚWIADCZENIA DLA UKRAINY

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ABSTRACT

Introduction: The need for effective legal regulation of production and sale of medical products in Ukraine due to its social effect is obvious and requires a high level of clarity. The experience of more advanced countries in this area, given the way chosen by Ukraine to harmonize our laws with EU legislation, is certainly could be a useful source of information. The urgency of issues need further intensification of national legal reforms. Some key points on concept of legal regulation of abovementioned sphere is a base of this study.

Material and Methods: Legislation of Ukraine, European Union, United States of America, Guidelines, developed by European Commission & Food and Drug Administration's (FDA), recommendations represented by international voluntary group and scientific works. This article is based on dialectical, comparative, analytic, synthetic and comprehensive research methods.

Discussion: This study provide a possibility to state that main difference of regulatory systems in EU and US is that the legal framework of the EU is more flexible. This flexibility is grounded on main principle that only basic quality requirements for medical devices is defined by legislative acts however more detailed requirements are defined in standards, technical regulations, specifications, which are discretionary in nature. Contractors are free to choose any technical solution that provides compliance with the essential requirements, they can choose among different conformity assessment procedures and between accredited conformity assessment bodies to which they want to apply. The contractors themselves is interested to pass the conformity assessment procedure and have the right to put a conformity mark on their medical device because it will give them a real competitive advantage. In contrast, US State regulatory system provides strict control over business entities and law act establishes the quality requirements of medical products. The only body that can authorize the introduction of medical products and perform post-market monitoring is Food and Drug Administration (FDA), which has almost unlimited competence in this sphere.

Conclusion: Taking into account further deepening of the European integration process of Ukraine, establishing of the regulatory system as much similar to that of the EU as possible is a main goal of legal reforms in abovementioned sphere. On the one hand, such system allows to implement effective control of contractors in the sphere of production and sale of medical products and provide safety of medical devices that are introduced, on the other hand, it does not afflict contractors with excessive and total control, allowing them to choose behavior that is most acceptable, understandable and user-specific. However, US's experience also has some positive characteristics, which could be taken into account. Therefore, such complex symbiosis of approaches from our point of view will balance controversial interest of manufacturers, sellers and consumers of medical devices.

KEY WORDS: regulation of production and trade of medical devices, EU & US experience in medical devices production and trade regulation.

Wiad Lek 2017, 70, 3, cz. II, 614-618

INTRODUCTION

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MATERIAL AND METHODS

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DISCUSSION

EXPERIENCE IN THE EU

Reform of the EU technical regulations was launched in 1985, among the objectives of which were to ensure a high level of products safety, free movement of goods within the single market, promoting competition and innovation, re-

ducing production costs. The main provisions of the reform was developed in 1989 and almost completely introduced in 1993. This system is called "The new approach", which implies that for each product there is a group of general safety requirements (so-called essential requirements) that define the certain characteristics of the product taking into account the risks, associated with its intended use [1]. The scope of this approach is: 1) basic safety requirements for products formulated in general (qualitative) form by laws and detailed safety requirements - in standards, which are discretional; 2) public authorities maintain a list of standards whose use on a voluntary basis guarantees the overall basic regulatory requirements (so called "harmonized" (with the general requirements); to prove the compliance with the specified "harmonized" standards contractor must communicate with accredited research laboratories/certification bodies; 3) authorities authorize specialized organizations for the examination of evidences submitted by the applicant for proving compliance with basic products (common) requirements of safety and efficiency. To date, there are about 30 EU directives of the "New Approach" [2, p. 55].

These requirements are binding and set out in the relevant directives. In addition, for each product there are standards harmonized with the relevant directives whose application is optional and serves as a proof of the reliability and security. Products manufactured in accordance with the requirements of European standards harmonized with EU directives, shall be deemed conforming with requirements (presumption of conformity). Facultative documentation in EU: guidelines, confirmed documents - European Medical Device Vigilance Guidelines (MEDDEV), Notified Body Operations Group (NBOG), Market Surveillance Operations Group (MSOG) and others who provide interpretation of the essential requirements [1].

Along with the "New Approach" in EU there is also so called "Global approach". Its feature is the application modules (standardized procedures) for various stages of the conformity assessment, establishing uniform criteria for their use and special purpose of performing these procedures. "Modular approach" provides a variety of conformity assessment schemes using a limited number of modules thus providing flexibility, adequate to the level of possible risk of harm for specific products. The "Global approach" based on the application of quality management systems and the controlling bodies must meet common requirements (EN 45000 series of standards) [1].

Product's conformity with the essential requirements of the relevant Directives is a guarantee that protects the manufacturer of medical devices from incidents that may occur during their circulation in the EU market [1]. The part of the "New approach" for medical devices (in terms of safety) are following directives: 93/42 / EEC "On medical products» (Council Directive 93/42 / EEC of 14 June 1993 concerning medical devices) [3]; 90/385 / EEC "On active medical devices implanted» (Council Directive 90/385 / EEC of 20 June 1990 on the approximation of the laws of the Member States relating to active implantable medical devices) [4]; 98/79 / EEC "of medical products for diagnostics in vitro» (Directive 98/79 / EC of the European Parliament and of the Council of 27 October 1998 on in vitro diagnostic medical devices) [5].

Directive 93/42 / EEC covers the entire field of medical devices, including items that can be used only once and inactive implants. Medical devices within the meaning of Directive 93/42 / EEC are tools, devices, etc., which are intended by the manufacturer for human use in order to find, monitoring, treatment, etc. injury, disability, illness, etc. or monitoring or change a part of the human anatomy or physiology of the human body, etc. Classification of the medical devices is crucial for certification process. Directive 93/42 / EEC provides four such classes. The main criteria for classification: (1) contact between the medical device and the human body, particularly with damaged skin or vital internal organs, (2) the invasive nature of the product, and (3) implantation of the product in human body, (4) the injection of substances or energy in human body, and (5) the time (period) of product application. Class I is set for products with minimal risk to the patient and are differentiated based on the criteria of sterility of the product. Stricter rules are apply to the certification of more dangerous products (classes IIa and IIb, class III – highest level of danger).

Directive 90/385 / EEC applies only to medical devices that require special energy source and has been implanted in the human body at least partially [6]. The basis of these guidelines based on the following principles: 1) legislative harmonization is limited to essential requirements; 2) only a product which design and manufacturing confirmed with the basic requirements could be introduced to market; 3) harmonized standards (European standards) should be transferred to national standards and meet the necessary requirements; 4) application of harmonized standards (European standards) or other technical specifications remains voluntary, and manufacturers have the right to choose any technical solution that provides compliance with the essential requirements; 5) manufacturers may choose between different conformity assessment procedures provided for in the relevant directives and related to specific products [7].

Products manufactured in compliance with these directives are marked with "CE" mark. CE sign is a mark, by which the manufacturer certifies that the product complies with the essential requirements of harmonized EU standards. Only the manufacturer or his authorized representative (not an importer, distributor, "unnotified" the person, government agency) can use CE Marking. The CE marking can be applied only to products for which such labeling is defined in specific EU harmonization directives, marking of other products is restricted. CE marking is not a "marketing product" and misuse of CE marking is violation. CE is a common marking sign that confirm compliance of product with requirements established by EU directives. Product labeling, signs or an inscription, which could confuse third party in accordance with CE marking, is not allowed. Any other product markings may be placed only if it does not deteriorate the visibility,

readability of the CE marking.

Member States shall ensure proper adherence of CE marking and respond appropriately to improper use of the marking. CE mark is applied to the product itself or on a specially designed for such mark label, the sign must be conspicuous, clearly visible, nondestructive (hardly destructive). If (by the nature of the product) it is impossible or unreasonable to mark a product itself, a sign must be printed on a package and documentation (if such). CE marking must not wear off to the extent that under normal conditions during the entire period of usability (appropriate for the product) it was impossible to wipe out.

CE Marking is applied within pre-market stage (could be accompanied with a mark indicating a risk or hazard to use) as a prerequisite for putting goods on the market, it cannot be applied separately. Identification number could be attached to CE marking by claimed subject (by himself, by manufacturer or authorized representative) if he participates in the control phase of production. Member states ensures proper implementation of the CE marking and determines the liability for such violations. These sanctions should be adequate to violation and should actively prevent the improper use of the marking [8].

The relevant directives provide functioning of the European databank for medical devices - Eudamed [9], the online resource that aims to provide information exchange between the competent authorities to strengthen market surveillance of medical devices. Information on Eudamed systematized according to a global web-range of such products (Global Medical Device Nomenclature (hereinafter - GMDN) [10]. While access to this portal is limited to users [11, p. 2], according to Glenn E, a leading specialist agency GMDN, one of the key points of harmonization in the field of medicine is to create a unified range of medical devices.

The structure of the range of medical devices GMDN determined by ISO 15225, each term of GMDN has code, name and description. Nomenclature of medical products is constantly evolves, the new categories, terms, synonyms appears, this classifier includes more than 20 000 positions that combine the concept of "medical device". It should be noted that they also include products, which are not established as such in terms of national legislation, such as batteries or computer software and programs [1]. Separate analysis of this sphere was described in our early papers [12, 13]

Technical regulations establish several varieties of conformity assessment procedures for medical devices, which may include a self-registration of required documentation by the manufacturer and the need to engage the conformity assessment body (which examines documents, products, clinical data (if needed) and confirms it with a certificate for the specified period). The complexity of this procedure depends on the risk-class of product. Most products like software will be assigned to Class I risk (the lowest), so manufacturers will be able to arrange the necessary documentation, declaration of conformity and use the national mark of conformity. However, today we can see the trend of growing amount of software that subject to the risk class IIa. For example, according to the classification criteria in Annex 2 to the Technical Regulation medical devices in Class IIa risk will include programs designed for direct diagnosis or monitoring of vital physiological processes. According to the clarification, approved in the EU (which is likely to be accepted by national regulatory authorities), vital physiological processes are respiration, heart rate, brain function, blood gases, blood pressure and body temperature. Therefore, software, designed for measuring these parameters should undergo more sophisticated conformity assessment procedure involving independent competent authorities [12].

Regarding the regulation of medical devices in the EU, it can be divided into two segments: pre-market and market stages. Pre-market stage includes conformity assessment procedures in appropriate certification scheme, Market stage regulation - the activity of market surveillance, conducting monitoring and inspection of products on the market for compliance with applicable guidelines [1].

In the EU, the various stages of control by the government are divided between different actors, including national authorities of the Member States (so-called Competent Authorities), private organizations, acting as a partners in the process of certification of medical devices (so-called European authorized certification bodies (Notified bodies) [14], and the European medicines agency (EMEA). [2,4].

The main feature of medical device's regulatory regime in the EU is that it contains elements of self-regulation and that product certification is performed by the manufacturer in conjunction with the European authorized products certification body [14]. Another specific feature is that EU-level set basic quality requirements for medical devices and procedures for assessing conformity and the Member States at their level have the right to determine the structure of certification bodies, to establish liability for non-compliance, etc. (in Germany there's 7 European Commissioners of certification of products, however, in some Member States such bodies are absent) [14].

THE US EXPERIENCE

Considering that the annual worldwide sales of medical devices exceed 220 billion US dollars, which is approximately 41 percent of the world market [15, p. 1] it is appropriate to consider the practice of legal regulation of this sector in the US. Before World War II the US had no federal regulation of medical devices. The law on the control of food production and medicine, adopted in 1906, does not apply to medical devices. Only a Federal law on food, drugs and cosmetics in 1938 was the first step in legal regulation of the circulation of medical products. According to this law, manufacturers of medical devices were required only to notify the FDA for product placement on the market. Given this, FDA was only able to evaluate the safety and efficacy of medical device after it has been placed on the market. The law was objectively ineffective. In 1962 this led to an amending the rules on market access for medicines so they could not have been admitted to the market without an approval of the FDA in terms of safety. However,

these changes did not affect medical devices that can still be placed on the market by just notificating the FDA [16]. New rules were adopted in 1976 and in the main continue to regulate the market today.

By 2010 four amendments to the law governing medical devices in the US were adopted. The Law on Safe medical products in 1990 gave more powers to the FDA for quality control of medical products on the market. Regulatory system for medical devices in US classifies risk by level of regulation that are necessary to ensure the safety and effectiveness of medical products. There are three classes of risk - Class I medical devices for low-risk Class II medical devices for medium risk and Class III medical devices for high-risk [16]. Such classification of medical devices by class determines their placement on the market, therefor, Class I exempt from having to obtain pre-sale permit (PMA) Class II require the pre-sale permit (PMA) 510 (K), Class III necessarily require the pre-sale permit (PMA), which often involves conducting clinical trials [16].

The main authority of the US in abovementioned sphere is FDA, which was created in 1939 as a response to growing concern about the emergence of dangerous drugs and fraudulent [15]. After its creation manufacturers of medical devices had to get approval from this body before the sale of their products [17]. Nowadays FDA is one of the eleven of the Ministry of Health and Human Services [18]. He was instructed to perform more than 45 federal laws governing the circulation of products that summary constitutes about 25% of US consumer spending [19], the scope of its competence includes wide range of objects from medicines and veterinary drugs, biological products, medical devices to food, cosmetics, and devices that emit radiation [20, p. 599].

Drugs and medical products are the two types of products that are regulated by the FDA. Under Food, Drug and Cosmetic Act medical products is described as instrument, apparatus, any components, devices, car accessories, implant, which (1) is recognized in the official National logbook to USP, (2) intended for use in the diagnosis of disease or other condition or for use in treating or alleviating the treatment or prevention of disease of humans or animals, or (3) intended to affect the structure or any function of the body and is not used to achieve this target chemical action within or on the body of human or animals [21].

FDA regulates medical devices circulation at pre-market and market stages, the procedure for obtaining such approval varies depending on risk-class of particular medical device. In addition to market access, FDA also performs the function of post-market surveillance, for which it has a wide range of credentials: sending warning letters, confiscation of medical products, import detention, etc. [16].

An analysis of all the above it can be concluded that regulate the production and sale of medical products in the EU and the United States is divided on two stages: prior to the market placement (so-called preliminary screening) and until expiration date (theoretically, up until the consumer can use it). Both the EU and the US procedures of approving for medical depends on class of medical device, but main difference of regulatory systems in EU and US is that the legal framework of the EU is more flexible. This flexibility is grounded on main principle that only basic quality requirements for medical devices is defined by legislative acts however more detailed requirements are defined in standards, technical regulations, specifications, which are discretionary in nature. Contractors are free to choose any technical solution that provides compliance with the essential requirements, they can choose among different conformity assessment procedures and between accredited conformity assessment bodies to which they want to apply. The contractors themselves is interested to pass the conformity assessment procedure and have the right to put a conformity mark on their medical device because it will give them a real competitive advantage. In contrast, US State regulatory system provides strict control over business entities and law act establishes the quality requirements of medical products. The only body that can authorize the introduction of medical products and perform post-market monitoring is Food and Drug Administration, which has almost unlimited competence in this sphere.

CONCLUSION

Taking into account further deepening of the European integration process of Ukraine, establishing of the regulatory system, as much similar to that of the EU as possible, is a main goal of legal reforms in abovementioned sphere. On the one hand, such system allows to implement effective control of contractors in the sphere of production and sale of medical products and provide safety of medical devices that are introduced, on the other hand, does not afflict contractors with excessive and total control, allowing them to choose behavior that is most acceptable, understandable and user-specific. However, US's experience also has some positive characteristics, which could be taken into account. Therefore, such complex symbiosis of approaches from our point of view will balance controversial interest of manufacturers, sellers and consumers of medical devices [23].

REFERENCES

1. Якість та безпека медичних виробів в Україні: в очікуванні змін [Електронний ресурс]. Щотижневик Аптека. 2014. available at: http://www.apteka.ua/article/309841.
2. ВС Антонов, Международный опыт регулирования рынка медицинских изделий и возможности его использования в России. Лабораторная служба. 2013.1.54 – 57.
3. Council of the European Parliament (12 July 1993) Council Directive of 14 June 1993 concerning Medical Devices (MDD 93/42/EEC), as amended by Directive 2007/47/EC of the European Parliament and of the Council of 5 September 2007, Official Journal of the European Communities0J L169 pi.
4. Council of the European Parliament (20 June 1990) Council Directive 90/385/EEC of 20 June 1990 on the approximation of the laws of the member states relating to active implantable medical devices (AIMD), Official Journal of the European Communities 0] L169 pi.

5. Council of the European Parliament (27 October 1998) Directive 98/79/EC of The European Parliament and of The Council of 27 October 1998 on in vitro diagnostic medical devices, Official Journal of the European Communities OJ L331 pi.
6. Kirchner S. The European Law of Medical Products, - 2005, available at: http://ssrn.com/abstract=759468
7. ЄО Свириденко. Сертифікація медичних виробів: технічні регламенти , Фармацевт. Практик. 2013. available at: http://fp.com.ua/articles/sertifikatsiya-meditsinskih-izdeliy-tehnicheskie-reglamentyi/
8. Маркування СЕ - значення, призначення, загальні положення й приклади застосування – 2013. – available at: http://cci.dp.ua/tl_files/data/Information%20CE%202.ppt
9. М Юнко. Державне регулювання цін на лікарські засоби і вироби медичного призначення в Україні: які ризики існують для фармацевтичних компаній? Щотижневик Аптека. 2011. available at: http://www.apteka.ua/article/93685
10. Global Medical Device Nomenclature – available at: https://www.gmdnagency.org/
11. ЛП Оверчук Л.П. Державне регулювання імплементації європейського досвіду технічних регламентів щодо виробів медичного призначення в умовах реформування галузі охорони здоров'я, Теорія та практика державного управління. 2013. 4. 1 – 8.
12. Vitalii Pashkov, Andrii Harkusha. Certain aspects on medical devices software law regulation, Wiadomości Lekarskie 2016, tom LXIX, nr 6, p. 765-767.
13. Vitalii Pashkov, Nataliya Gutorova, Andrii Harkusha. Medical device software: defining key terms. Wiadomości Lekarskie 2016, tom LXIX, nr 6, p. 813-817.
14. B Lobmayr. An Assessment of the EU Approach to Medical Device Regulation against the Backdrop of the US System. European Journal for Risk Regulation, Issue 2, Berlin: Lexxion-Verl.-Ges., 2010, 210.
15. Lu Y.J. The Change in Knowledge Proposal: Repairing Preemption Doctrine in Medical Products Liability. – Lu Y.J., SSRN papers 2010 – available at: http://ssrn.com/abstract=1957954
16. JA Brougher, MM Gaba, M Deem, RB Termini. Practical Guide to Navigating the Medical Device Industry: Advice from Experts in Industry, Law, Intellectual Property and Academia. Auchincloss FDLI Monograph Series, Volume 2, Number 4. 2011. 87.
17. DO Beers. Generic and Innovator Drugs: A Guide to FDA Approval Requirements. Aspen Publishers. Ed. 7. 2008. 1676.
18. US Department of Health and Human Services Organization Chart – available at: http://www.hhs.gov/about/orgchart/
19. The Food and Drug Administration Celebrates 100 Years of Service to the Nation – FDA News – available at: http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/2006/ucm108572.htm
20. J. Paradise, W. Tisdale, R. Hall, E. Kokkoli. Evaluating Oversight of Human Drugs and Medical Devices: A Case Study of the FDA and Implications for Nanobiotechnology. Journal of law, medicine & ethics. 2011. 598 – 624.
21. The Food and Drug Administration (FDA) Office of the Commissioner – available at: http://www.fda.gov/AboutFDA/CentersOffices/OrganizationCharts/ucm393155.htm
22. Vitalii Pashkov, Olena Batyhina, Maryna Trotska. Legal Restraints of Pesticide Effect on Human Organism and Environment Under International Legislation. Wiadomości Lekarskie 2016, tom LXIX, 2017, tom LXX, nr 2 cz II, p. 366-372.
23. Vitaliy M. Pashkov, Iryna A. Golovanova, Andrii A. Olefir: The impact of the legal regime of intellectual property protection in the pharmaceutical market. Wiad Lek 2016, 69, 3 (cz. II), 587-591.

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Received: 20.02.2017
Accepted: 12.05.2017