



## Barriers of medicinal products sales over the Internet in Poland

JAKUB PAJDOWSKI<sup>1</sup>, ANNA KIJEWSKA<sup>2\*</sup>, MARIOLA DROZD<sup>2</sup>, GRZEGORZ DOMAN<sup>3</sup>

<sup>1</sup>Johnson&Johnson Poland Sp. z o.o., Warsaw, Poland

<sup>2</sup> Department of Applied Pharmacy, Medical University of Lublin, Poland

<sup>3</sup> The Pharmacy of Health Center, Police, Poland

### ABSTRACT

The basic aim of presented article is the identification and the systematization of the inhibitory factors in development of virtual pharmaceutical market in Poland. The phenomenon of barriers of market development is the object of many publications, however the majority of the affirming was not supported by empirical investigations. The study presents the results of questionnaire survey taken on a group of 582 respondents making the medicine purchases via the Internet. Thanks to that, it was possible to identify empirically real barriers and their range, recognizable only theoretically so far. On the basis of the resources the e-pharmacy consumer profile has been created. In the next part of the article, the systematization of unfavorable factors regarding to pharmaceutical online market was undertaken. Additionally, the opinion of the importance of key factors will be created in future.

**Keywords:** online pharmacies in Poland, indirect sales of medicines, e-pharmacies

### MEDICINAL PRODUCTS SALES OVER THE INTERNET – GENESIS, LEGAL GROUNDS

According to industry publications, sale of a medicinal product over the Internet is defined as a part of e-commerce. It includes commercial transactions of medicinal products with the use of open data communication networks such as the Internet. [11] B. Targański, a specialist in e-commerce law, states three types of transactions:

- online ordering and delivery of intangible goods and services (direct e-commerce)
- online ordering of tangible goods and their offline delivery (indirect e-commerce)
- Transactions based on access to data communication networks e.g. the Internet.

The transactions may occur simultaneously and can be complemented with additional electronic functions e.g. electronic payments or browsing for information on goods, services and suppliers online. [10]

Electronic commerce presents a rapid growth. As much as 74 per cent of Polish Internet users have become clients at online stores. [3] This online commerce phenomenon can also be seen in the pharmaceutical industry

resulting in the growth of medicinal product pharmacies. Their operational functioning has been eventually regulated legally by the State. The reason for such a regulation being that medicinal products are not treated as common consumer goods. Online medicinal product shopping is not yet popular among Polish consumers, as presented further in the article, although this type of distribution channel is expected to grow fast along the increase in awareness of information society, and the importance of this distribution channel will rise. [8]

The country to start sale of medicinal products over the Internet was the United States of America. This practice has then in turn been used by pharmacies in Western Europe, and along with development of electronic communication between people, indirect sales grew with importance. The development enabled online pharmacies with mail-order sale of medicinal products come into being. Presently a constant growth in online pharmacy commerce is observed as the Internet access increases [9].

The basic European legal act defining operational measures for online pharmacies (requirements, responsibilities and special conditions to be met for retail supply of medicinal products) is Directive 2000/31/EC of 8th June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce). The Direc-

#### Corresponding author

\* Department of Applied Pharmacy, Medical University of Lublin,  
1 Chodźki Str., 20-093 Lublin, Poland  
e-mail: [anna.kijewska@umlub.pl](mailto:anna.kijewska@umlub.pl)

tive sets conditions and obligations for suppliers of medicinal products. [12]

Retail of medicinal products for sale at a distance has gone through different stages. Until recently, Polish legislature has forbidden the sale of medicinal products over the Internet. On 30<sup>th</sup> March 2007 the parliament amended the Pharmaceutical Law therefore allowing pharmacies and affiliated retailers the sale of medicinal products without prescription at a distance.

Further bill amendment was passed on 15th September 2010, which introduced a definition of indirect sale of medicinal products. The amendment itself actually resulted in prohibition of sale of medicinal products on prescription over the Internet. [1]

According to the current Polish law it is only possible to trade OTC (Over The Counter) medicinal products online. Each sale of medicinal product on prescription will be illegal. The full retail is allowed by conventional pharmacies and limited service by conventional pharmacies only.

Regulations concerning sales via the Internet in Poland are as follows (the Regulation of the Ministry of Health of 14<sup>th</sup> March 2008 on the conditions of sale at a distance of medicinal products issued without the prescription – Journal of Laws a 60, Item 374) [6]:

1. The basis for the deal out of a medicinal product is placement of an order by the patient in various forms i.e. using the electronic form available on the website, by telephone, fax, e-mail or on the premises.
2. Each pharmacy must supply a patient with all the necessary information on the web page such as name, registration address, license number and the office issuing the license as well as full product information (price, cost of shipping, method of payment, delivery options).
3. Shipment and transportation of medicinal products must be sustained in terms of quality, safety of use and solidity. Proper package of medicinal products must include a label with receiver's data, order number, contact number, conditions of transportation and a pharmacy stamp. Transportation must take place in a carefully defined area that provides medicinal products free from organic or microbiological contamination and mechanical damage.
4. The pharmacy is obliged to register with the Voivodeship Pharmaceutical Inspector at least 14 days before the start of sales of medicinal products. Obtained licence allowing a business to run a pharmacy has to be placed on the web page.
5. A pharmacist appointed by the manager on duty is responsible for the order processing at a pharmacy.
6. A pharmacy must provide a contact line for the recipients with the unit within the opening hours and up to 2 hours after the agreed delivery time.

7. A pharmacy unit is obliged to refund a medicinal product within a 10 day-purchase period and in accordance with the procedures of law provided. [2]

## ONLINE MEDICINAL PRODUCTS SALES IN POLAND – SITUATION ANALYSIS

*The number of pharmacy units on the Polish marketplace (off and on-line) – examples and profile thereof.* In the early '90s, a rapid growth in the number of operating pharmacies was observed. The number has risen from 3,800 to 9,000 within the last 10 years. Forthcoming years have brought a further growth. The number of pharmacy units in September 2012 was 13,687 (according to PharmaExpert).

The number of pharmacy units is not a sufficient indicator of level of growth of the pharmacies to the number of population. It is necessary to supply it with other types of information. A more realistic index can be defined by the density ratio of chains of pharmacies. The first points to the number of populace per pharmacy unit, the latter to the distance between the units. The most common index refers to the availability ratio (the first listed index). The number of populace per pharmacy is among the lowest in Europe – in 2012, it reached 2,800, while the UE average rate is about 4,000. Therefore, we have one of the best ratios of pharmacy availability per citizen in Europe.

In regard to fast growth of conventional pharmacies, online pharmacy units have sprung up relatively late – the first online pharmacy was set up in 2004/2005 (different sources point to different data). At the moment there are nearly 165 online pharmacies, most being set up after Poland's accession to EU. Indirect sales are run by 1.2% of all pharmacy units on the Polish market.

Online pharmacy ranking in Poland with regard to popularity of the web site (May 2011) [10]

- 1) Apteka DOZ.PL – a clear market leader. The pharmacy represents a different market approach i.e. pharmaceutical products ordered over the Internet are to be collected in one of 1700 operating pharmacies.
- 2) Domzdrowia.pl – the pharmacy is concentrated on sale by the Internet only. Its inventory includes not only medicinal products but also cosmetics, perfumes and medical equipment.
- 3) I-apteka.pl – has a wide range of products, a user-friendly web site and runs special offers on a regular basis.
- 4) Apteka Słonik – a family owned pharmacy offering medicinal products, dietary supplements and dermo-cosmetics.
- 5) Tanie-leczenie – belongs to Kwiaty Polskie Group. The pharmacy is known for low prices of medicinal products and unique discount offers.
- 6) Cefarm24.pl – according to Internet Standard magazine e-commerce report in 2010, the business has reached top sales among all pharmacy groups in Poland.

- 7) Fabrykaszrowia – established in 2006. It offers high quality health and beauty products. The web page is user-friendly and easy to use.
- 8) Apteka OTC – one of the longest operating online pharmacies in Poland, offering both products and services for the patients.
- 9) Apteka Jak Marzenie – the youngest of all pharmacies presented in this list.
- 10) Apo-Discounter.pl – a foreign competition representative from Germany.

*Sale of medicinal products in Polish online and off-line pharmaceutical market.* Another important indicator of the pharmaceutical market is the sales value of pharmaceutical products. The sales have settled at around 24 to 33 billion Polish zloty in the past six years (2007-2013). [7]

Sales of medical products over the Internet has accounted for an insubstantial percentage of gross sales value on the pharmaceutical market. The value of online sales at 65 million PLN constituted of 0.3% pharmaceutical market gross value. Internet pharmacies expected a skyrocketing growth in the following years. However, in 2011 gross value sales hit only 200 million PLN therefore constituting only 0.6% of overall gross value sales of all pharmaceutical products on the Polish market. The structure of sales was dominated by cosmetic products (65% of sales) and OTC medicinal products (33% of sales). [4]

## IDENTIFICATION OF ONLINE MEDICINAL PRODUCT SALES BARRIERS

The issue of barriers of medicinal products sales over the Internet in Poland is the subject of a number of debates and analysis in various pharmaceutical publications. The findings included in this publication are based on a questionnaire survey conducted by Grzegorz Doman, a graduate of Faculty of Pharmacy at Medical University of Lublin, and try to empirically identify some of the issues.

The survey included 582 responders with 500 users of pharmacies and 82 practising pharmacists. The respondents were divided into different categories such as gender, age, residence, education and professional status. Survey questions were divided into four groups:

1. Questions addressed to all the surveyed (7 questions, concerning internet access, online shopping and use of online pharmacies)
2. Second group of questions applied to those making use of online pharmacies (13 questions, on the subject of online shopping for medicinal products)
3. Third group of questions for those who did not use online pharmacies (3 questions, why one does not make use of this type of shopping, what is one's opinion on the subject, and whether one is planning to purchase medicinal products online in the future)

4. The last group of questions was addressed to the expert pharmacists (14 questions, comprised of questions from previous groups).

Questions included in the survey were of alternative character (the responder had two excluding answers YES/NO, disjunctive when the surveyed chose one of many answers, and conjunctive questions with a choice of many possible answers. The questionnaire also included open-ended questions enabling the surveyed to communicate freely.

The questions were set into two questionnaires where one was targeted at consumers and the second one at the experts. The results of the consumer surveys are presented in the table below [2].

Source: Self-assessed findings based on a questionnaire survey conducted by Grzegorz Doman, a graduate of Faculty of Pharmacy at Medical University of Lublin in his MA thesis on 'Online pharmacies in Poland'.

Among these surveyed, a slight advantage was noticeable within the age group 18-26, the remaining groups were more equally represented. Gender differences were as follows: 55% women and 45% men. In education segment, those with higher education comprised 44% of responders, secondary school graduates – 40%. The biggest group of responders was represented by wage labourers i.e. 36% and those still actively present in education system 34%.

The research showed that not all respondents had access to the Internet where the biggest group was represented by those past the age of 60. In lower age groups 18-25 and 26-40, nearly all of respondents were the Internet users (only one person in each of the groups did not have the internet access).

Internet access turned out to be the fundamental barrier as far as online shopping is concerned and while it did not occur within the lower age groups, it grew in importance with the age increase. Persons above the age of 60 scarcely used the Internet.

The number of people using the Internet had a direct impact on online shopping. The basic determinant was age group and the same rule applied as above. Within lower age groups, a significant percentage of the Internet users was actively shopping online, then moving up, within 41-60 age group online shopping activity applied just to 25% of the Internet users and above the age of 60 only around 6%.

In comparison with the number of people shopping online in general, the percentage of online pharmacy users was very low, constituting of only 14% of surveyed. The biggest shopping online age group was 26-40 and then 28-25 group. Persons above the age of 60 did not purchase medicinal products online.

Among online shoppers the major percentage were higher education graduates, followed by secondary school

**Table 1.** The results of the consumer surveys

Item	Consumer group		Internet users		Online shoppers		Online pharmacy clients	
	Number	%	Number	%	Number	%	Number	%
Total surveyed	500	100	417	83.5	300	60	68	14
	100		100		100			
Women	274	55	-	-	-	-	44	65
Men	226	45	-	-	-	-	24	35
	100		100		100			
18-25 age group	187	37	187	45	157	52	25	37
26-40 age group	125	25	101	24	94	31	39	57
41-60 age group	92	18	105	25	43	14	4	6
Over 60 age group	96	20	25	6	6	3	0	0
	100		100		100			
University graduates	218	44	-	-	-	-	45	66
Secondary school graduates	201	40	-	-	-	-	23	34
Vocational education	56	11	-	-	-	-	0	0
Elementary education	25	5	-	-	-	-	0	0
	100		100		100			
Contract workers	180	36	-	-	-	-	39	57
Self-employed persons	30	6	-	-	-	-	2	3
Homestead	7	1.25	-	-	-	-	1	2
Pensioners	70	14	-	-	-	-	0	0
Annuitant	26	5	-	-	-	-	0	0
Students	172	34	-	-	-	-	25	36
Unemployed	13	2.6	-	-	-	-	1	2
	100		100		100			

Source: Self-assessed findings based on a questionnaire survey conducted by Grzegorz Doman, a graduate of Faculty of Pharmacy at Medical University of Lublin in his MA thesis on 'Online pharmacies in Poland'.

ones and as far as gender is concerned - women were in majority.

In addition, professional status was of importance. The biggest group of online pharmacy customers was with professionals constituting 57% of studied, followed by students with 35% mark. Retired and pensioners did not account for online pharmacy customers. Residence factor was of a less significance; however, a slight advantage in online shopping was among those living in large urban areas.

The results of the study give us the basis for an online consumer profile insight.

**It is a person within 26-40 group age, a higher or middle education graduate, having internet access, mostly a female gender.**

This leads to conclusion that factors unfavorable in terms of online shopping for medicinal products are:

- older age (the older the person the lower computer literacy and willingness to shop online)
- low education (the higher one the more enthusiastic approach towards online shopping)
- lack of employment (professional life compliments online shopping).

Aforementioned factors can be then regarded as barriers in online medicinal product shopping.

Further barriers can be identified based on opinions of surveyed consumer group that never used online pharmacies (432 persons – 86% of surveyed). The most common reasons for not using this type of shopping were:

1. Lack of means in terms of online purchase of medicinal products on prescription.
2. Inability to consult directly with the pharmacist.
3. Lack of computer literacy, the Internet and online shopping procedures.

#### 4. Long delivery waiting time.

The surveyed group of professionals (82 pharmacists), where only 6% among those questioned purchased medicinal products online, pointed at such drawbacks as:

1. Consumer habits favoring the traditional means of medicinal product shopping.
2. Lack of trust towards the Internet and low computer literacy.
3. Other reasons (lack of means of online purchase of medicinal products on prescription, poor product offer online, non user-friendly web sites) [2]

There are references in various articles that list many different threats and barriers on growth of the internet pharmaceutical market;

- New and yet unpopular way of shopping for medicinal products – difficulty in changing the custom.
- Lack of personal interaction between the customer and the pharmacist and as far as pharmaceutical counseling is concerned, it is only possible by means of e-mail or telephone conversation. Those may be either time consuming or costly. Self-assortment in an online pharmacy may be daunting and may lead to expensive mistakes.
- Prohibition of sale of medicinal products on prescription – online pharmacies are not allowed the sale of medicinal products online. It is only possible to place an order and collect the products in person. Sale at a distance and shipping are prohibited. Prescribed medicinal products purchase is only possible at a conventional pharmacy.
- Data safety, payment protection – financial settlements via the internet are associated with high risk. A significant group of customers does not entrust this method of payment.

- Illegibility of web pages and display of medicinal products.
- Lack of control over sale process – probability of addiction increases when dosage is not right.
- Shipment risk – medicinal products risk either storage faults or ones occurring from unsafe transportation process.
- Lack of prompt access to medicinal products – delivery time of online order is loose (1-3 working days) which is not a favorable factor during illness. The necessity of medicinal product purchase at the time of sudden illness virtually eliminates online shopping.
- The cost of shipping – is the additional cost for the consumer and plays a major role on whether the purchase of medicinal product is made in a single manner or large quantities. Above a certain price tag, shipping may be included in the purchase cost. Customers shopping on a regular basis at online pharmacies may find the process daunting and collect a number of spare medicinal products.

Basing the view on enlisted congruent barriers of online pharmacies, it can be stated that online medicinal products shopping is a suitable replenishment to conventional pharmacy shopping.

## SUMMARY, CLOSING POINTS

Analyzing the subject of online sales development of medicinal products, various barriers can be identified in this market sector. Based on the results of the survey and the scientific literature on the subject, we would like to both structure the classification of barriers and try to assess their actual impact on the future of online pharmaceutical market.

Firstly, it is important to consider both legal and political aspects. Information technology in Poland has been adopted with some delay when compared to other countries e.g. USA. The birth of the Internet gave opportunities to online shopping, medicinal products included. Legal grounds for online pharmacies were created as late as in 2010 (the Bill of Pharmaceutical Law), several years later than in the USA or UE. Polish law forbids sales of medicinal products on prescription by online pharmacies. This in turn causes significant barriers and tames further development.

Secondly, it is worth considering the psychological barriers. The study has revealed that the responders pointed out traditional means of medicinal product purchase as their consumer habits. This results in quite indifference towards the subject of online shopping (44% of surveyed responders presented an indifferent approach towards online pharmacies and 25% have shown a negative opinion on subject of online medical product shopping).

Both lack of personal interaction between the customer and the pharmacist and the lack of pharmaceutical coun-

seling were found to be significant problems. There also was a noticeable concern towards the right choice of medicinal product. Online shopping is bound with data safety and payment protection fears of financial settlements via the internet. A number of customers point towards the inconvenience of online order delivery time, which in turn translates into frequent conventional pharmacy shopping.

It is necessary to point towards technological barriers. Lack of access to the Internet applies to 14% of responders in the light of the survey findings. Yet other technological barriers arise due to computer literacy issues and inability of Internet usage. Quite clearly visible in case of those advanced in years whose preferred method of shopping for medicinal products turns out to be conventional. Polish pharmaceutical law sets steep conditions for suppliers of medicinal products. Shipment and transportation of medicinal products must provide sustained condition of quality, safety of use and solidity. Proper package of medicinal products must include a label with receiver's data, order number, contact number, conditions of transportation and a pharmacy stamp. Transportation must take place in a carefully defined area that provides medicinal products free from organic or microbiological contamination and mechanical damage. The inside area must also have temperature measurement facilities, all protected from the third party access or theft. A pharmacy must provide a room for medicinal product preparation and packaging as well as a table, a stillage or a platform to store ready-to-ship products or packaging materials.

Demographic and social factors have already been analyzed on the basis of the results of the survey. The barriers include low education, older age, and unemployment. It can be assumed that the barriers may eventually disappear in the future.

The development of online medicinal products shopping over the Internet has a bumpy future. Rapid information technology growth of society's awareness, which imminently leads towards change in lifestyle will slowly but surely crush all existing barriers.

## REFERENCES

1. [Apteki internetowe nie ominą już sprzedaży leków wydawanych na receptę.] [In Polish] *Dziennik Gazeta Prawna*, 7.02.2011, [http://prawo.gazetaprawna.pl/artykuly/484787,apteki\\_internetowe\\_nie\\_omina\\_juz\\_zakazu\\_sprzedazy\\_lekow\\_wydawanych\\_na\\_recepte.html](http://prawo.gazetaprawna.pl/artykuly/484787,apteki_internetowe_nie_omina_juz_zakazu_sprzedazy_lekow_wydawanych_na_recepte.html), on-line, available: 20.03.2011.
2. Doman G.: *Działalność aptek internetowych w Polsce*, [In Polish] praca magisterska, Lublin 2011, Wydział Farmaceutyczny Uniwersytetu Medycznego w Lublinie.
3. E-commerce w Polsce w oczach internautów 2010, raport firmy GEMIUS S.A. [In Polish] 01.2011, <http://www.gemius.pl/pl/raporty/2011-01/01>, on-line, available: 03.04.2011.
4. Gawłowski S.: *Obroty e-aptek urosną o 1000 procent*. [In Polish] 16.07.2008, on-line, available 01.03.2013.

5. Głowiak G.: *Największe apteki internetowe w Polsce*. [In Polish] 10.05.2011, <http://www.eapteki.info/najwieksze-apteki-internetowe-w-polsce/>, on-line, available: 15.05.2013.
6. Rozporządzenie Ministra Zdrowia z dnia 14 marca 2008 roku w sprawie warunków wysyłkowej sprzedaży produktów leczniczych wydawanych bez przepisu lekarza, [In Polish] (Dz. U. Nr 60, poz. 374)
7. *Rynek farmaceutyczny w Polsce 2011-2013*. [In Polish] eGospodarka.pl, 6.04.2011, <http://www.egospodarka.pl/art/galeria/64189,Rynek-farmaceutyczny-w-Polsce-2011-2013,1,39,1.html>, on-line, available: 18.05.2013.
8. Snoch M., Skowron A.: Ocena wybranych aspektów działalności aptek internetowych w Polsce. [In Polish]. *Farmacja Polska*, 10.2008, 64, 19: 848.
9. Szuba T.J.: Apteka sieciowa (internetowa). [In Polish] *Aptekarz. Czasopismo Farmaceutyczno-Ekonomiczne* 2002, 11/12: 243-246.
10. Targański B.: *Ochrona konkurencji w działalności platform handlu elektronicznego*. [In Polish] Wolters Kluwer Polska, Warszawa 2010, 55.
11. *The Economic and Social Impact of Electronic Commerce: Preliminary Findings and Research Agenda*. OECD Publications, Paryż 1999, 28.
12. Tracz M., Kwiatkowska A., Orszulak-Michalak D.: Rozwój elektronicznego handlu w polskim sektorze farmaceutycznym. Rozwój podstaw prawnych. [In Polish] *Farmakoekonomika. Czasopismo farmaceutyczno-ekonomiczne* 2006, 1: 12-16.