

# SURVEY AND ASSESSMENT OF QUALITY OF PHARMACEUTICAL SERVICES RENDERED IN KAUNAS' COMMUNITY PHARMACIES

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**Headline:** An evaluation of pharmaceutical services rendered in Kaunas' community pharmacies and its conformity with requirements laid down in legal act on good pharmacy practice provision.

**Key words:** *good pharmacy practice; pharmaceutical services; pharmaceutical care; consumption of medicines; pharmacy specialist.*

## Summary

*The article analyses whether the community pharmacies in Kaunas city adhere to Good pharmacy praxis rules, whether they provide high quality pharmaceutical services. Factors, contributing to the quality of these services, are also analyzed.*

*Objective. Assessment of pharmaceutical services in cases of dispensing of prescription only and over-the-counter medicines for treatment of acute or chronic diseases or minor illness.*

*Material and methods. Theoretic: analysis of literature sources in the aspect of the chosen study. Empirical: an anonymic poll has been conducted to find out the position of the respondents. Community pharmacies of Kaunas have been chosen as the object of the study.*

*Results and outcomes. The results of the study have demonstrated that the quality of the services provided in community pharmacies varies in the sale of Rx and over-the-counter medicines as well as in cases of different health condition of the patients. It was estimated during the study that pharmaceutical services provided in Kaunas community pharmacies are not of sufficient quality. Too little attention is being dedicated to the peculiarities of the sale of Rx and over-the-counter medicines. This could cause drug use problems and worsen the health condition of the patient.*

*Also the confidentiality of the pharmaceutical service is not being guaranteed.*

## BACKGROUND

In Lithuania Good Pharmacy Practice rules were adopted in the 15<sup>th</sup> of June, 2007 (law No. V-494 issued by the Ministry of Health (1)). The goal of Good Pharmacy Practice rules is to provide clients with safe medicines and high quality pharmaceutical services (2–5). In order to reach this, medications and other health care products should be labelled correctly, pharmaceutical services should be of sufficient quality, and when pharmacy is prepared, it should implement pharmaceutical care (6–8). A pharmacist who sells (dispenses) medicines and pharmacy technician must implement a pharmaceutical service. Not efficiently provided pharmaceutical service can cause problems related to the use of medicines (9). In pharmacies medicines are issued according to:

1. The recommendations for prescription writing and dispensing (selling) medicines No. 112 (2002, No, 28-1013), approved by Ministry of Health of the Republic of Lithuania in the 8<sup>th</sup> of March, 2002 (10);

2. Pharmaceutical information (labels and package inserts) and all other officially announced information about medicine;

3. Acquired knowledge about medicinal substances, drug interactions, stability of the chosen drug form, ways and terms of use, conditions of storage.

## OBJECTIVE

Assessment of pharmaceutical services in cases of dispensing of prescription only and over-the-counter medicines for treatment of acute or chronic diseases or minor illnesses. The goal was to investigate, whether the community pharmacies in Kaunas city adhere to Good Pharmacy Practice rules, and whether they provide high

quality pharmaceutical services. Factors related to these services (the content and confidentiality of information provided to patients, availability of medicines) were analysed. We also compared pharmaceutical services provided by pharmacist and pharmacy technician, as well as the quality of service when patient is ill with acute or chronic diseases or minor illness, and the differences of information about Rx and over-the-counter medicines.

#### *METHODS. MATERIALS AND PARTICIPANTS*

*Theoretic:* analysis of literature sources associated with pharmaceutical care, pharmaceutical service, requirements for Good Pharmacy Practice and its' practical implementation. In addition to this, we made an analysis of legislations for regulating the health care system of the European Union and the Republic of Lithuania. *Empirical:* an anonymous questionnaire has been conducted to find out the position of the respondents.

People living in the wards of Kaunas and visiting pharmacies in this territory have been chosen as the object of the study. According to the location of wards we have chosen community pharmacies of Kaunas where we implemented our study. 60 respondents answered our questionnaires (this number represents the 95% confidence interval and 0.05 requirements for an error that are sufficient in quantitative studies). Data were analysed using the statistical package SPSS for Windows 15.0. Chi-square ( $\chi^2$ ) criterion was used to estimate the difference in the distribution of the qualitative variables. Statistical significance was set at  $p < 0.05$ . The questionnaire was made according to the requirements of Good Pharmacy Practice rules. It contains closed, half-open and open questions.

#### *RESULTS AND DISCUSSION*

**General results.** During the study we observed and evaluated pharmaceutical service provided by pharmacists (69.8%) and pharmacy technicians (30.2%) working in community pharmacies of Kaunas. 30.2% of prescription only, 41.5% of over-the-counter and 28.3% of both types of medicines were sold (to one patient). 42.3% of patients purchased only one drug, 38.5% – two drugs, 7.7% – three, 9.6% – four, 1.9% – five or more. The reason for buying medicines was an acute disease in 47.2% cases, chronic disease – 34% and minor disorder – 18.9%. These data show the tendency of buying medicines for acute illnesses.

In order to implement Good Pharmacy Practice and provide high quality pharmaceutical services the special

conditions are required. Therefore we evaluated the following factors. Firstly, availability of medicines was good: in 96.2% of cases medicines asked by patients were available in the pharmacy and in 3.8% they were not available. Only 32% of pharmacies offered an opportunity to order medicines by an e-mail. Secondly, we evaluated the confidentiality of information provided to patients. In 100% cases there was no isolated place or waiting zone dedicated for confidential talk between a pharmacist and a patient. The importance of this problem is shown by the fact that in 47% cases while purchasing medicines in pharmacy there were other patients waiting in the line.

**Dispensing prescription only medicines.** When dispensing medicines, we analyzed whether the prescription is written according to the prescription writing recommendations. In 96.7% of cases the form of prescribed medicine was written correctly, in 100% concentration and in 83.3% dose of drug were correct. 73% of pharmacy specialists explained patients how the prescribed medicine is acting. In 62% of cases medicines were sold according to the trade name written in prescription, while 38% of pharmacists chose the medicine by their own (58% of them suggested the cheapest drug analogue). In 93% of cases pharmacy specialists had none additional questions associated with the taken prescription.

**Dispensing over-the-counter medicines.** When selling over-the-counter medicines in 78% of cases pharmacy specialists asked patients what are they complaining about, in 61% of cases – how long they are ill, 58% – what are they buying the medicine for, 32% – about patient's age, 5% – if patient is allergic, 3% – about patient's bad health habits. Only 32% of pharmacists encourage patients to visit doctor for an additional consultation. Even though most of the patients (71%) knew what medicines they are going to buy, 57% of pharmacy specialists offered alternative drugs, that in 91% of cases changed the opinion of a patient. These results show how important is to find out patient's needs and provide high quality pharmaceutical service.

**Self-care.** When dispensing an over-the-counter medicine pharmacy specialists informed patients about the following risk factors of self-care: 42% about false choice of treatment, 39% about false evaluation of symptoms, 31% about an avoidance of visiting doctor, 26% about false timing of drug use, 24% about inadequate dosage or way of taking the medicine, 22% about the use of similar medicines, 12% about possible drug interaction.

**Evaluation of information provided about prescrip-**

**tion only and over-the-counter medicines.** In the study we analyzed differences of general information given about prescription only and over-the-counter medicines (table 1). 73% of patients purchasing Rx drugs got information about their use comparing with 82% of patients buying over-the-counter drugs.

Moreover, 6% vs. 9% of clients were advised how to storage the medicine properly, and 75% vs. 41% were recommended to read a package insert. Only in 6.3% vs. 23% of cases a pharmacist asked about the other medicines that are used at the moment. 81% vs. 73% of pharmacy specialists informed how to take the medicine (before eating, etc.), and 50% vs. 46% of them told for how long one should use the medicine. Only 6.3% of patients buying Rx medicines and 18% buying over-the-counter medicines were warned about possible side effects, and 5% knew the contraindications of the drug bought without prescription.

All the differences of pharmaceutical servi-

ces mentioned above were statistically significant.

**Evaluation of pharmaceutical services in the case of different health conditions.** The majority of prescription only medicines (50%) were sold for the treatment of chronic diseases comparing with 90% of over-the-counter drugs bought for an alleviation of minor symptoms ( $p < 0.05$ ). The study results reflect that patients in case of an acute disease would rather buy medicines independently than visit a doctor (44%).

When comparing the amount of medicines bought according to the severity of illness (table 2), we found that patients usually purchase 1–2 medicines independently of their health condition ( $p > 0.05$ ).

In 94% of cases medicines were available independently from the severity of disease. Pharmacy specialists offered cheaper drug analogues for 62% of patients ill with acute disease, 56% – with chronic disease, and 50% – having minor symptoms, however, in case of acute disease 58% of pharmacists sold medicine according to trade name in comparison with 63% in case of chronic disorder. When evaluating the correctness of written prescriptions, 8% of recipes dedicated for the treatment of acute disease and 6% for a chronic disease were incorrect. In the case of acute or minor conditions pharmacy specialists asked patients what are they buying the medicine for, what are they complaining about, how long they are feeling those symptoms and how old are they. In this group patients more frequently were offered different medicines (3 table). The influence of advertising was not statistically significant ( $p > 0.05$ ): it had an impact on 21% of acute cases, 11% – of chronic, and 40% – of minors cases.

General information related to use of prescription only or over-the-counter medicines was similar according to the severity of disease. In the case of self-care patients having acute or minor symptoms were more often warned about possible risks. However, all the mentioned differences are not statistically significant.

**Evaluating the quality of pharmaceutical services provided by pharmacist and pharmacy technician.** In this study we also analyzed the differences between pharmaceutical services provided by pharmacist and pharmacy technician. There was no significant difference in the distribution of sold Rx and over-the-counter medicines. If a patient had acute complaints he or she was more often consulted by pharmacist (54% vs. 31%). Aspects related to consultation and pharmaceutical service were similar (form of prescribed medicine, concentration, dosage, way of use; contraindications and drug interaction; social, law and economic aspects). However,

Table 1. Evaluation of information provided about prescription only and over-the-counter medicines.

Information	Prescription only medicines	Over-the-counter medicines
Aspects of use	81%	73%
Package insert information	75%	41%
Timing of drug	50%	46%
Other medicines used at the moment	6.3%	23%
Side effects	6.3%	18%
Storage conditions	6%	9%
Contraindications	.	5%

Table 2. The amount of medicines according to the severity of illness (%).

Amount of medicines	Severity of disease		
	Acute	Chronic	Minor
1	37.5	38.9	60.0
2	37.5	38.9	40.0
3	12.5	5.6	0%
4	12.5	11.1	0%
5	0.0	5.6	0%
In all	100.0	100.0	100.0

Table 3. Questions for a patient according to the severity of disease (%).

Question	Acute	Chronic	Minor
Complaints	83	56	90
Patient's age	47	22	40
Duration of complaints	63	44	70
Drugs used at the moment	68	–	70
Offered alternative medicine	63	33	67

some differences were noticed: pharmacists were prone to offer a cheaper drug analogue (62% vs. 50%), while pharmacy technicians chose medicines on their own opinion (60% vs. 42%). In addition to this, pharmacists more frequently consulted with doctors (76% vs. 56%). If patients do not know which over-the-counter medicine to buy 36% of them asked pharmacist and 10% asked pharmacy technician about it. This statement is supported by the fact that over-the-counter medicines offered by a pharmacist were suitable in 99.8% of cases comparing with 70% of pharmacy technician's suggestions ( $p < 0.05$ ).

### CONCLUSIONS

1. Community pharmacies of Kaunas are not properly prepared to implement Good Pharmacy Practice. There are no conditions for confidentiality of talk between patient and pharmacy specialist, moreover, only 32% of pharmacies offer an opportunity to order medicines on internet.

2. Pharmaceutical service provided by a pharmacy specialist is important: 44% of patients ill with acute disease took medical advice from a pharmacy specialist, as well as a choice of over-the-counter medicine is influenced by a pharmacist.

3. Pharmaceutical service provided in community pharmacies of Kaunas are not of good quality. When dispensing a medicine not enough information is given about drug interaction and possible contraindications, and not always a cheaper drug analogue is offered.

4. When selling an over-the-counter medicine patients are not properly warned about the risks of self-care. In the case of acute or minor diseases pharmacy specialists did not properly identified patient's needs and problems related to drug use.

5. Not sufficient quality pharmaceutical services might cause problems related to drug use and worsen patient's health condition.

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### FARMACINIŲ PASLAUGŲ KOKYBĖS TYRIMAS IR VERTINIMAS KAUNO MIESTO VISUOMENĖS VAISTINĖSE

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Santrauka

Straipsnyje analizuojama, kaip Kauno miesto visuomenės vaistinėse laikomasi Geros vaistinės praktikos nuostatų reikalavimų, ar jose kokybiškai teikiama farmacinė paslauga, taip pat analizuojami veiksniai, turintys įtakos šių paslaugų kokybei. Darbo tikslas. Farmacinės paslaugos kokybės įvertinimas išduodant receptinius ir nereceptinius vaistus, esant ūmiai, lėtiniai ligai ar nežymiam sveikatos sutrikimui. Tyrimo medžiaga ir metodai. Teorinis: literatūros šaltinių analizė pasirinkto tyrimo aspektu. Empirinis: respondentų nuomonės išaiškinimui atlikta anoniminė anketinė apklausa. Tyrimo objektu pasirinkome Kauno miesto visuomenės vaistines. Rezultatai ir išvados. Tyrimo rezultatai parodė, kad visuomenės vaistinėse teikiamų farmacinių paslaugų kokybė skiriasi, parduodant receptinius ir nereceptinius vaistus, taip pat ir esant skirtingai pacientų sveikatos būklei. Tyrimo metu nustatytas, kad farmacinė paslauga Kauno miesto vaistinėse teikiama nepakankamai kokybiškai. Per mažai dėmesio yra skiriama receptinių ir nereceptinių vaistų išdavimo ypatumams: ne visada pacientui pasiūlomas pigiausias vaisto analogas, nepakankamai išsiaiškinamos vaisto farmakologinis poveikis. Tai gali sukelti vaistų vartojimo problemas ir pabloginti paciento sveikatos būklę. Teikiant farmacinę paslaugą nėra užtikrinamas jos konfidencialumas.

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