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Original article

## Current Experience of Primary Health Care Physicians on Drug Provision Issues

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#### Abstract

Achieving universal health coverage is a key policy goal in many countries that are committed to strengthening primary health care (PHC). In this context, it is important to determine access to medications and related issues on the part of medical specialists.

**The purpose of our study** is to study the experience of the medical staffs (general practitioners, nursing staff, pharmacist, therapist) with the state of drug supply at the PHC level.

**Methods**. A questionnaire developed which included three main parts: general part; consultation of the patient regarding drug provision as well as generating applications for medicines and timely provision of the right drug to patients in PHC. The survey was conducted through a Google form and a paper version among medical staffs of PHC at the city level. A total 122 respondents participated in survey.

**Results.** A larger number of nurses, 36.4%, and general practitioners, 28.9% attended in survey (p<0.001). Most of them worked in a government organization (81.1%). 89.9% of respondents believe that the healthcare system guarantees the safety of pharmacotherapy (p = 0.009), and 84.2% agree with the statement that the success of treatment depends on the provision of professional pharmaceutical consulting services. Also, medical specialist indicated on needs for training 89.8%.

**Conclusion**. Our research demonstrates current prescribing practices in PHC facilities. There is a need for training of PHC specialists on the issues of identifying and forming an application for medicines, taking into account site indicators.

Keywords: primary healthcare, medicine prescription, medical specialist, quality of service, Kazakhstan.

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## Introduction

Achieving universal health coverage is a priority in all countries, which in turn is linked to strengthening primary health care [1,2]. Often, decision makers in the healthcare system face difficulties in ensuring access to medicines, which are associated with issues of accessibility, timeliness and quality. According to the World Health Organization, primary health care aims to cover the entire community by strengthening prevention and monitoring the health status of the population [3,4].

As the gateway to the health care system, drug provision at the primary health care level is essential for timely, quality, and affordable medical care [5]. Access to medicines is a problem for most countries in the world, and its solution depends on the policies in a given country [6,7]. Access to medicines depends on the interaction of a network of public and private actors and different players in the health system, all of whom must work together and join political forces, social

## Materials and methods

We developed questionnaire based on literature sources. The questionnaire included open and close questions; thus, respondents could leave their comments. The questionnaire included three main parts: general part; consultation of the patient regarding drug provision as well as generating applications for medicines and timely provision of the right drug to patients in primary health care (PHC). The survey was conducted through a Google form and a paper version among medical staffs of PHC at the city level. A total 122 respondents participated in survey. Gender distribution is not provided. Both genders are participating in the study. Criteria for inclusion were

## Results

A larger number of female as well as nurses, 36.4%, and general practitioners, 28.9%, took part in the survey (p<0.001), this is due to the fact that health policy are focused on reducing the number of therapists and increasing the number of general practitioners. The largest number of survey participants worked in a government organization (81.1%). 89.9% of respondents believe that the healthcare system guarantees the safety of pharmacotherapy (p=0.009), where young specialists most agree with this statement. An interesting fact is the lack of willingness of doctors with extensive experience to provide pharmaceutical advice

and interdisciplinary efforts to find solutions [8,9]. A systematic review found that problems associated with medicines in primary health care are severe, with a median of 70.04% [10]. Prescribing guidelines recommend the use of scientifically proven medicines to avoid unnecessary adverse health effects and costs [11]. Research shows that prescribing is the most challenging area for young professionals [12].

In Kazakhstan, coordination of drug provision is carried out by different organizations, starting from the highest level, ending at the level of the medical organization. The main objectives of this organization are to resolve issues related to ensuring and regulating the processes of delivery and prescription of medicines.

<u>The purpose of our study</u> is to study the experience of the medical staffs (general practitioners, nursing staff, pharmacist, therapist) with the state of drug supply at the primary health care level.

voluntary consent to participate in the study; general practitioners of PHC.

Data analysis: We compare data between working experience and their understanding the process of the drug provision. Statistical analyses were performed using the SPSS13, where a descriptive analysis was performed and variables were tested using a chi-square test. Statistical significance was determined by p-values 0.05.

The study approved at local ethics committee of the Kazakh National Medical university

to patients (25.0%). 84.2% agree with the statement that the success of treatment depends on the provision of professional pharmaceutical consulting services in addition to the dispensing of drugs; medical specialists with more than 11 years of experience were undecided to this question (p = 0.029). Young specialists note that patients often seek advice on pharmacotherapy, while 37.5% of employees with extensive work experience noted no, which may be due to the provision of accessible information by the patient, taking into account their length and experience (p=0.474 - not statistically significant) Table 1.

	d opinion on consultation (		

	racteristics N (%)	Up to 5 years	6-10 years	11-15 years	16-20 years	21 or more	Total	P-value
	IN (70)	N (%)	N (%)	N (%)	N (%)	N (%)		
G	Female	47 (82.5%)	25 (75.8%) 12 (92.3%) 9 (81.8%) 8 (100.0%) 101 (8		101 (82.8%)	0.450		
Sex	Sex Male	10 (17.5%)	8 (24.2%)	1 (7.7%)	2 (18.2%)		21 (17.2%)	0.459
	General practitioners	22 (39.3%)	9 (27.3%)	2 (15.4%)	1 (9.1%)	1 (12.5%)	35 (28.9%)	
	Nursing staff   Profession Pharmacist	24 (42.9%)	11 (33.3%)	2 (15.4%)	2 (18.2%)	5 (62.5%)	44 (36.4%)	
Profession		3 (5.4%)	2 (6.1%)				5 (4.1%)	<0.001
	Therapist	1 (1.8%)	5 (15.2%)	8 (61.5%)	3 (27.3%)	1 (12.5%)	18 (14.9%)	
	Other	6 (10.7%)	6 (18.2%)	1 (7.7%)	5 (45.5%)	1 (12.5%)	19 (15.7%)	

Characteristics N (%)		Up to 5 years	6-10 years	11-15 years	16-20 years	21 or more	Total	P-value
		N (%)	N (%)	N (%)	N (%)	N (%)		
Job	State organization of primary health care	51 (89.5%)	22 (66.7%)	11 (84.6%)	10 (90.9%)	5 (62.5%)	99 (81.1%)	0.168
	Private Primary Health Care Organization	3 (5.3%)	5 (15.2%)			1 (12.5%)	9 (7.4%)	
	Outpatient clinic	3 (5.3%)	6 (18.2%)	2 (15.4%)	1 (9.1%)	2 (25.0%)	14 (11.5%)	
Do you think that the healthcare system guarantees the safety of pharmaco- therapy?	Yes	52 (92.9%)	32 (97.0%)	12 (92.3%)	6 (60.0%)	5 (71.4%)	107 (89.9%)	0.009
	No	1 (1.8%)	1 (3.0%)	1 (7.7%)	1 (10.0%)		4 (3.4%)	
	I find it difficult to answer	3 (5.4%)			3 (30.0%)	2 (28.6%)	8 (6.7%)	
Are you ready	Yes	54 (94.7%)	27 (81.8%)	10 (76.9%)	7 (70.0%)	5 (62.5%)	103 (85.1%)	0.01
to provide pharmaceutical	No	2 (3.5%)	3 (9.1%)			2 (25.0%)	7 (5.8%)	
counseling to patients?	I find it difficult to answer	1 (1,8%)	3 (9.1%)	3 (23.1%)	3 (30.0%)	1 (12.5%)	11 (9.1%)	
Do you believe that the success of	Yes	53 (93.0%)	28 (84.8%)	9 (69.2%)	7 (70.0%)	4 (57.1%)	101 (84.2%)	
treatment depends on the provision	No	3 (5.3%)	4 (12.1%)	1 (7.7%)	1 (10.0%)	2 (28.6%)	11 (9.2%)	0.029
of professional pharmaceutical consulting services in addition to drug dispensing?	I find it difficult to answer	1 (1.8%)	1 (3.0%)	3 (23.1%)	2 (20.0%)	1 (14.3%)	8 (6.7%)	
Do your patients often turn to you for advice on pharmacotherapy?	Yes	48 (84.2%)	29 (87.9%)	10 (76.9%)	7 (70.0%)	5 (62.5%)	99 (81.8%)	0.474
	No	7 (12.3%)	4 (12.1%)	2 (15.4%)	2 (20.0%)	3 (37.5%)	18 (14.9%)	
	I find it difficult to answer	2 (3.5%)		1 (7.7%)	1 (10.0%)		4 (3.3%)	

Table 1 (Continuation) - Characteristics of the participants and opinion on consultation of the patient regarding drug provision

A greater number of young specialists are ready to turn to a colleague if they have doubts about drug interactions (p=0.05). The largest number of respondents noted the absence of complexity when creating an application for medicines, however, the proportion of doctors who claim the presence of complexity remains 34.5%. The negative trend is that 70.0% of respondents agree that there are problems with the supply of medicines (p=0.042). Young specialists note that their opinion is taken into account when preparing applications for medicines (p=0.004). 52.5% of respondents note that it is rare to receive information (complaints, positive reviews) about the quality of purchased medicines (p=0.048), of which positive reviews prevail 66.7%, while 22.5% note both positive and negative reviews (Table 2).

Characteristics N (%)		Up to 5 years	6-10 years	11-15 years	16-20 years	21 or more	Total	P-value
		N (%)	N (%)	N (%)	N (%)	N (%)		
Do you consult	Yes	48 (84.%)	30 (90.9%)	11 (84.6%)	5 (50.0%)	5 (71.4%)	99 (82,5%)	
a fellow physician if you are unsure about drug interactions?	No	6 (10.5%)	2 (6.1%)	2 (15.4%)	5 (50.0%)	2 (28.6%)	17 (14.2%)	0.05
	I find it difficult to answer	3 (5.3%)	1 (3.0%)				4 (3.3%)	
Are there any	Yes	22 (39.3%)	11 (33.3%)	4 (30.8%)	3 (30.0%)	1 (14.3%)	41 (34.5%)	0.127
difficulties when creating an application for medicines?	No	34 (60.7%)	18 (54.5%)	6 (46.2%)	5 (50.0%)	5 (71.4%)	68 (57.1%)	
	I find it difficult to answer		4 (12.1%)	3 (23.1%)	2 (20.0%)	1 (14.3%)	10 (8.4%)	

Characteristics		Up to 5 years	6-10 years	11-15 years	16-20 years	21 or more	Total	P-value
N (%)		N (%)	N (%)	N (%)	N (%)	N (%)		1 Value
	Yes	48 (84.%)	30 (90.9%)	11 (84.6%)	5 (50.0%)	5 (71.4%)	99 (82.5%)	0.05
Do you consult a fellow physician if you are unsure about drug interactions?	No	6 (10.5%)	2 (6.1%)	2 (15.4%)	5 (50.0%)	2 (28.6%)	17 (14.2%)	
	I find it difficult to answer	3 (5.3%)	1 (3.0%)				4 (3.3%)	
	Yes	22 (39.3%)	11 (33.3%)	4 (30.8%)	3 (30.0%)	1 (14.3%)	41 (34.5%)	
Are there any difficulties when creating an	No	34 (60.7%)	18 (54.5%)	6 (46.2%)	5 (50.0%)	5 (71.4%)	68 (57.1%)	0.127
application for medicines?	I find it difficult to answer		4 (12.1%)	3 (23.1%)	2 (20.0%)	1 (14.3%)	10 (8.4%)	0.127
Is there a delay in the delivery of medicines within the framework of	Yes	43 (76.8%)	24 (72.7%)	10 (76.9%)	3 (30.0%)	4 (50.0%)	84 (70.0%)	
Compulsory Social Health Insurance	No	10 (17.9%)	7 (21.2%)	3 (23.1%)	7 (70.0%)	4 (50.0%)	31 (25.8%)	0.042
(CSHI) and the Guaranteed Volume of Free Medical Care (GBMC)?	I find it difficult to answer	3 (5.4%)	2 (6.1%)				5 (4.2%)	
	always taken into account	46 (80.7%)	27 (81.8%)	13 (100.0%)	4 (40.0%)	3 (37.5%)	93 (76.9%)	0.004
Is the opinion of medical personnel taken into account when preparing	often taken into account	8 (14.0%)	5 (15.2%)		3 (30.0%)	2 (25.0%)	18 (14.9%)	
applications for medicines?	rarely	3 (5.3%)	1 (3.0%)		2 (20.0%)	2 (25.0%)	8 (6.6%)	
	never taken into account				1 (10.0%)	1 (12.5%)	2 (1.7%)	
	often	24 (42.9%)	9 (28.1%)	4 (30.8%)	1 (9.1%)	2 (25.0%)	40 (33.3%)	
Have you received information	yes, rarely	27 (48.2%)	20 (62.5%)	7 (53.8%)	5 (45.5%)	4 (50.0%)	63 (52.5%)	0.048
(complaints, positive reviews) about the quality	does not arrive	5 (8.9%)	3 (9.4%)	2 (15.4%)	4 (36.4%)	2 (25.0%)	16 (13.3%)	
of purchased medicines?	I find it difficult to answer				1 (9.1%)		1 (0.8%)	
	positive reviews	41 (75.9%)	17 (56.7%)	8 (72.7%)	4 (44.4%)	4 (57.1%)	74 (66.7%)	0.263
If yes, what information is received more	negative reviews	4 (7.4%)	5 (16.7%)		1 (11.1%)	2 (28.6%)	12 (10.8%)	
often:	both of them equally	9 (16.7%)	8 (26.7%)	3 (27.3%)	4 (44.4%)	1 (14.3%)	25 (22.5%)	

Table 2 (Continuation) - Challenges related to medicines issues in primary healthcare

In a medical organization, examination of drug prescriptions for patients is carried out by a clinical pharmacologist 70.9%, a doctor-audit expert least often 22.2%, and both of the above specialists were noted by 2.6% of respondents (p=0.002). More than a third of respondents note insufficient explanation of orders (33.9%), or lack of explanation was indicated by 4.2% of survey participants (p=0.001). There also remains a share of doctors who have not been trained in preparing applications for medicines (methods for forecasting

## Discussion

Late supply of medicines and insufficient quantities of medicines prescribed and dispensed represent barriers to access to basic health services [13]. In our research, medical specialists note the presence of and deducting calculations) 21.2% (p=0.054), although the need for training is noted by 89.8% of survey participants (Table 3).

Medical specialist gets information about new medicines from conferences 71.2% as well as among young specialist indicated from colleagues 9.3% (p=0.004) (Figure 1).

late delivery of medications, which affects the process of treatment and support of public health, including the quality of services provided.

						<b>J J J J</b>		
Characteristics N (%)		Up to 5 years	6-10 years	11-15 years	16-20 years	21 or more	Total	P-value
		N (%)	N (%)	N (%)	N (%)	N (%)		
	Clinical Pharmacologist	47 (85.5%)	21 (67.7%)	9 (69.2%)	1 (9.1%)	5 (71.4%)	83 (70.9%)	
Who conducts an examination of	Audit expert doctor	7 (12.7%)	7 (22.6%)	3 (23.1%)	8 (72.7%)	1 (14.3%)	26 (22.2%)	0.002
drug prescriptions for patients in your medical organization (multiple answers are possible)?	Please specify other	1 (1.8%)		1 (7.7%)	1 (9.1%)	1 (14.3%)	4 (3.4%)	
	Clinical pharmacologist and medical audit expert		2 (6.5%)		1 (9.1%)		3 (2.6%)	
Is there any clarification of orders related to the formation of applications for	Yes, in sufficient quantities	36 (65.5%)	20 (60.6%)	7 (53.8%)	4 (44.4%)	6 (75.0%)	73 (61.9%)	0.001
	Yes, but not enough	19 (34.5%)	12 (36.4%)	6 (46.2%)	2 (22.2%)	1 (12.5%)	40 (33.9%)	
medicines?	No		1 (3.0%)		3 (33.3%)	1 (12.5%)	5 (4.2%)	
Have you received training on the preparation of	Yes	47 (85.5%)	27 (81.8%)	10 (76.9%)	4 (44.4%)	5 (62.5%)	93 (78.8%)	
applications for medicines (methods for forecasting and deduction of calculations)?	No	8 (14.5%)	6 (18.2%)	3 (23.1%)	5 (55.6%)	3 (37.5%)	25 (21.2%)	0.054
How much training do you need on preparing drug claims?	Yes, necessary to calculate demand	48 (87.3%)	31 (93.9%)	13 (100.0%)	8 (88.9%)	6 (75.0%)	106 (89.8%)	0.353
	Not necessary	7 (12.7%)	2 (6.1%)		1 (11.1%)	2 (25.0%)	12 (10.2%)	

Table 3 - Current practice and needs to improvement on drug regulation in medical organization

The underlying causes of this problem were associated with the prescribing process, including drug and dose selection, suggesting that special attention should be paid to continuing education and training of prescribers in primary care settings. We found that specialists with less work experience are more likely to consult with colleagues compared to those with more experience. It is necessary to study the reasons for the reluctance of doctors with extensive experience to contact their colleagues, since if there is doubt, it is best to have a joint discussion and search for more evidence-based information regarding the prescription of medications [14].

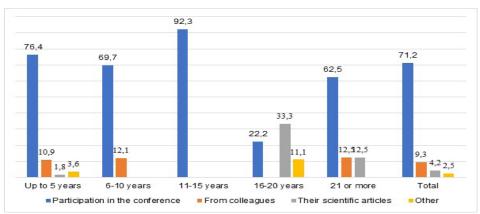


Figure 1- Source of information about new medicines

Primary care specialists also note that prescription monitoring is carried out for the most part by clinical pharmacologists, which is a positive aspect that allows gaps to be identified in a timely manner and training activities carried out. Involvement of a clinical pharmacologist has been shown to reduce unnecessary hospitalizations and drug prescribing [15,16]. Their participation also makes it possible to avoid polypharmacy and optimize the effective prescription of drugs [17,18]. The role of cooperation between the pharmacist and local doctors is also important, since the patient's understanding of the prescribed drug is an important factor for its timely use. Previous studies have shown that these types of collaborations are effective in providing quality care [19,20].

Future research should focus on issues related to the challenges in studying drug-drug interactions as the number of older adults increases and the potential risks associated with drug interactions increase accordingly [21].

## Conclusions

This study demonstrates current prescribing practices as well as related issues. There is a need for training of primary health care specialists on the issues of identifying and forming an application for medicines, taking into account site indicators. Further study is needed to explore the causes of delayed drug delivery and identify influencing factors.

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All authors read and agreed to the final version of the manuscript and signed the copyright transfer form.

### Дәрі-дәрмекпен қамтамасыз ету мәселелері бойынша алғашқы медициналық көмек бағыты дәрігерлерінің заманауи тәжірибесі

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#### Түйіндеме

Денсаулық сақтау қызметтерімен жалпыға бірдей қамтуға қол жеткізу алғашқы медициналық-санитарлық көмекті (МСАК) нығайтуға ұмтылатын көптеген елдерде негізгі саяси мақсат болып табылады. Бұл тұрғыда медициналық мамандардың дәрі-дәрмектерге қол жетімділігін және онымен байланысты мәселелерді анықтау маңызды.

Біздің зерттеуіміздің мақсаты МСАК деңгейінде дәрі-дәрмекпен қамтамасыз ету саласындағы медициналық персоналдың (жалпы практика дәрігерлері, орта медициналық персонал, фармацевтер, терапевтер) тәжірибесін зерделеу болып табылады.

Әдістері. Сауалнама әзірленді, оған үш негізгі бөлім кірді: жалпы бөлім; емделушіге дәрі-дәрмекпен қамтамасыз ету мәселелері бойынша кеңес беру, сондай-ақ дәрі-дәрмектерге өтінімдерді қалыптастыру және МСАК пациенттеріне қажетті препаратты уақтылы ұсыну. Сауалнама қалалық деңгейде МСАК медициналық қызметкерлері арасында Google нысаны және қағаз нұсқасы арқылы жүргізілді. Сауалнамаға барлығы 122 респондент қатысты.

Нәтижелер. Сауалнамаға медбикелер (36,4%) және жалпы тәжірибелік дәрігерлер (28,9%) (p<0,001) көбірек қатысты. Олардың көпшілігі мемлекеттік ұйымдарда жұмыс істеді (81,1%). Респонденттердің 89,9% денсаулық сақтау жүйесі фармакотерапияның қауіпсіздігіне кепілдік береді деп санайды (p = 0,009), ал 84,2% емдеудің сәттілігі кәсіби фармацевтикалық кеңес беру қызметтерін ұсынуға байланысты деген пікірмен келіседі. Сондай-ақ, медициналық маман 89,8% оқу қажеттілігін атап өтті.

Қорытынды. Біздің зерттеуіміз МСАК мекемелерінде дәрі-дәрмектерді тағайындаудың заманауи тәжірибесін көрсетеді. МСАК мамандарын сайттың көрсеткіштерін ескере отырып, дәрілік препараттарға өтінімді анықтау және қалыптастыру мәселелеріне оқыту қажеттілігі бар.

Түйін сөздер: алғашқы медициналық-санитарлық көмек, дәрі-дәрмек тағайындау, медициналық маман, қызмет көрсету сапасы, Қазақстан.

# Современный опыт врачей первичной медицинской помощи по вопросам лекарственного обеспечения

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#### Резюме

Достижение всеобщего охвата услугами здравоохранения является ключевой политической целью во многих странах, которые привержены укреплению первичной медико-санитарной помощи (ПМСП). В этом контексте важно определить доступ к лекарствам и связанные с этим вопросы со стороны медицинских специалистов.

Целью нашего исследования является изучение опыта медицинского персонала (врачей общей практики, среднего медицинского персонала, фармацевтов, терапевтов) в области лекарственного обеспечения на уровне ПМСП.

Методы. Была разработана анкета, которая включала три основные части: общую часть; консультацию пациента по вопросам лекарственного обеспечения, а также формирование заявок на лекарства и своевременное предоставление нужного препарата пациентам в ПМСП. Опрос проводился с помощью формы Google и бумажной версии среди медицинского персонала ПМСП на городском уровне. Всего в опросе приняли участие 122 респондента.

Результаты. В опросе приняло участие большее число медсестер (36,4%) и врачей общей практики (28,9%) (р<0,001). Большинство из них работали в государственных организациях (81,1%). 89,9% респондентов считают, что система здравоохранения гарантирует безопасность фармакотерапии (р = 0,009), а 84,2% согласны с утверждением, что успех лечения зависит от предоставления профессиональных фармацевтических консультационных услуг. Также медицинский специалист указал на потребность в обучении 89,8%.

Выводы. Наше исследование демонстрирует современную практику назначения лекарств в учреждениях ПМСП. Существует необходимость в обучении специалистов ПМСП вопросам выявления и формирования заявки на лекарственные препараты с учетом показателей сайта.

Ключевые слова: первичная медико-санитарная помощь, назначение лекарств, медицинский специалист, качество обслуживания, Казахстан