ORIGINAL ARTICLE

Availability and quality of primary health care in the compulsory health insurance system in Kazakhstan

Makhabbat Shurenova[1], Kuralbay Kurakbayev[1], Tleukhan Abildaev[2], Aigul Tazhiyeva[3]

[1]Kazakhstan Medical University, Higher School of Public Health, [2]Almaty Branch of the Non-Profit Joint Stock "Social Health Insurance Fund", [3]S.D. Asfendiyarov Kazakh National Medical University; Almaty, Kazakhstan

Corresponding author:

Aigul Tazhiyeva

S.D. Asfendiyarov Kazakh

National Medical University

Tole-bi str. 94, Almaty, 050020,

Republic of Kazakhstan

Phone: +7 747 790 72 71;

E-mail: a.tazhieva@kaznmu.kz

Makhabbat Shurenova ORCID: https://orcid.org/0000-0003-1131-5684

ABSTRACT

Aim To evaluate patient satisfaction with primary healthcare services and determine effectiveness indicators within Kazakhstan's compulsory health insurance system.

Methods An analytical observational study with cross-examination was conducted in Kazakhstan's primary healthcare (PHC) organizations. Patient satisfaction was assessed through a 35-item closed-question questionnaire. An analysis of stimulating component result indicators for per capital standard financing in PHC organizations based on their achieved outcomes was performed.

Results Among surveyed patients, 54.0% (1.80±1.108) expressed complete satisfaction with medical care, while 59.4% (1.82±1.269) perceived laboratory tests as readily accessible. Notably, males exhibited higher satisfaction levels with medical care and the availability of laboratory tests compared to females. The city polyclinics № 3 and № 14 in Almaty, Kazakhstan, achieved significant performance indicators, resulting in a 1.1-fold increase in the incentive component of per capital funding.

Conclusion Within the framework of compulsory health insurance, primary healthcare organizations in Kazakhstan offer affordable and effective medical care, as attested by surveyed patients and the final result indicators of the polyclinics.

Key words: healthcare access, health insurance, healthcare quality, primary care

INTRODUCTION

Universal health coverage (UHC) is a critical goal, particularly in low and middle-income countries, aiming to enhance access to health services and provide financial protection through voluntary health insurance (1). The effectiveness of compulsory health insurance (CHI) in any country is profoundly influenced by its socioeconomic system, which dictates the accessibility of both general practitioners and specialists to the population (2).

Health insurance and its acceptance can be influenced by various demographic factors. For instance, a study on the introduction of contributory National Health Insurance (NHI) in Saudi Arabia indicated that individuals aged 30-39 years were more inclined to embrace this system compared to those aged 50 years and older (3).

Moreover, in countries like Switzerland, where universal compulsory health insurance is in place, additional hospital insurance can be purchased independently of social and economic factors, ensuring equal access to care (4). Socioeconomic factors have also been associated with healthcare-seeking behavior, with household wealth and urban residence positively correlated with the likelihood of consulting formal healthcare providers (5).

Understanding the role of risk preferences within voluntary health insurance systems is essential. Research indicates that, on average, individuals exhibit a high degree of risk aversion, and the insured tend to be more risk-averse than the uninsured (6).

In the Commonwealth of Independent States (CIS), private insurance plays a crucial role, especially in the private hospital sector, ensuring timely and comprehensive access to treatment (7).

However, a notable challenge in health insurance systems worldwide is the quality of medical care and the availability of essential resources, including medical personnel, medications, and technology (8). Efficient use of public funds is a paramount concern, necessitating measures to identify and mitigate wasteful spending in the healthcare sector (9).

Research has shown that individuals with higher educational attainment among the economically disadvantaged are more likely to enroll in national insurance schemes than those with lower or no educational qualifications (10). In the context of the CIS countries, challenges in achieving widespread compulsory health insurance coverage persist (11). These include financial constraints, inadequate quality of care, medicine and equipment shortages, suboptimal patient-provider relationships, lengthy waiting times, and a lack of trust (12). Demographic factors also influence willingness to pay for healthcare, with the less educated, males, younger individuals, and larger households generally expressing a greater willingness to pay (13).

The challenges faced by various countries include insufficient funding, suboptimal pooling of resources, and unmet expectations in strategic procurement, all of which need to be addressed (14).

An in-depth examination of program satisfaction is vital, particularly in healthcare initiatives, as it can reveal disparities in the availability of care for patients with chronic conditions (15).

In the Republic of Kazakhstan (RK), the legislation in the field of healthcare is driven by the goal of safeguarding citizens' right to accessible and high-quality medical care. This is crucial for the protection and promotion of the population's health in the RK. Primary healthcare, as a cornerstone of socioeconomic development and the national healthcare system, is central to achieving this goal.

The present study aims to assess patient satisfaction with primary healthcare services and to identify key indicators of effectiveness within the framework of Kazakhstan's compulsory health insurance system. It is motivated by the imperative to enhance healthcare accessibility, quality, and effectiveness within the RK, aligning with the broader goals of universal health coverage.

PATIENTS AND METHODS

Patients and study design

This analytical cross-sectional one-time sociological research study user the survey method with questionnaires and in-depth interviewing method involved 556 patients aged 18 and ≥60 years, who applied for primary health care in the City Polyclinics of Almaty city of the Republic of Kazakhstan in the period January 01-December 31, 2022.

For the analysis, an in-depth examination of performance indicators within the context of two city polyclinics was conducted, namely, City Polyclinic No. 3 and City Polyclinic No. 14, both situated in Almaty.

City Polyclinic #3 is situated in Almaty, Kazakhstan, in a convenient urban area to serve the local population. Like many city polyclinics, it provides a wide range of primary healthcare services, including general medical consultations, preventive care, vaccinations, and treatment for common illnesses. The polyclinic is staffed by healthcare professionals, including doctors, nurses, and support staff, who work to ensure the well-being of the patients. Facilities has examination rooms, waiting areas, and administrative offices to manage patient appointments and records. The number of the serviced population is 67,158.

City Polyclinic #14 is also located in Almaty, Kazakhstan, serving a specific neighborhood or district within the city. Similar to other polyclinics, it offers primary healthcare services, including medical consultations, health check-ups, and basic medical treatments. The polyclinic is typically staffed by a team of medical professionals, including doctors, nurses, and administrative personnel. Facilities: It is equipped with examination rooms, waiting areas, and facilities for medical testing and diagnostics. City Polyclinic #14 serves as a vital community healthcare center, addressing the healthcare needs of residents in its vicinity. The number of the serviced population is 44502. Both City Polyclinic #3 and #14 play integral roles in the healthcare infrastructure of Almaty, ensuring that local residents have access to essential medical services and contributing to the overall health and well-being of the population in their respective areas of operation.

The demographic characteristics of the study participants, including gender, age, education, and marital status, were examined (Table 1).

Informed consent was obtained from all subjects involved in the study.

To comply with all ethical principles and rules during the sociological research, the project received ethical approval from the Kazakh Medical University "KSPH". The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics committee of the Kazakhstan Medical University "KSPH" (IRB –15-2023 from 17 May 2023).

Methods

The study involved the analysis of the duration of waiting time (at the registration desk and for doctor appointments) within medical organizations in order to assess the efficiency of service delivery (Table 2).

To determine the incentive component of the complex per capita norm for financing primary healthcare organizations based on their achieved results, performance indicators were assessed (Table 3). These indicators are used to incentivize primary care medical workers and support their professional development.

The study also examined the accessibility of laboratory tests and medical care among male and female patients within the primary healthcare system. This assessment was based on the responses provided by the study's respondents (Figures 1 and 2).

The study included a detailed analysis of the city polyclinics #3 and #14 of Almaty, Kazakhstan. The analysis was focused on the allocation and actual utilization of funds and the achievement of specific performance indicators (Table 3).

The results of these analyses indicated the satisfaction levels of patients and the performance of the primary healthcare organizations. The findings would serve as the basis for financial incentives and professional training of medical staff in city polyclinics #3 and #14 of Almaty, with the goal of improving healthcare services and patient satisfaction.

The study utilized the Portal as an automated tool for calculating the incentive component of the comprehensive per capita rate for primary healthcare based on achieved outcome indicators. This calculation was carried out in accordance with the procedure outlined in the Order of the Minister of Health of the Republic of Kazakhstan (dated December 21, 2020; No. KR DSM-309/2020). This order defines the rules and methodology for forming tariffs for medical services provided within the guaranteed volume of free medical care and (or) in the system of compulsory social health insurance (16).

The "Additional Component to the Primary Health Care Tariff" serves as a complementary explanation and enhancement to the aforementioned Order of the Minister of Health of the Republic of Kazakhstan (16). This portal provides a detailed description of the information system for which the order was developed. It enables the calculation of the cost related to performance

indicators of Primary Health Care (PHC) organizations in various regions and determines the additional component to be included in the PHC tariff (17).

Statistical methods

The analyses of continuous variables were performed using Student's t-test. The numerical, continuous values were represented as mean and categorical variables were presented as numerical values and percentages. All hypotheses were two-sided, and p<0.05 was considered statistically significant.

RESULTS

In this study 556 respondents participated in the survey, of which 153 (27.3%) were male and 403 (72.7%) were female (Table 1). The highest number of respondents were aged 18-29 years, 209 (37.8%), aged 40-49 years, 101(18.1%) and aged 30-39 years, 95 (17.0%). The majority of respondents had higher education, 304 (54.7%), secondary vocational education, 138 (24.8%) and

Table 1. Socio-demographic characteristics of the respondents

Variable		No of patients (%)	Mean (SD)	p
Gender	Male	153 (27.3)		
	Female	403 (72.7)	1.72 (0.447)	0.000
Age (years)	18-29	209 (37.8)		
	30-39	95 (17.0)		
	40-49	101 (18.1)	2.48 (1.445)	0.000
	50-59	76 (13.7)		
	≥60	75 (13.4)		
Education	Secondary	96 (17.3)		
	Secondary vocational	138 (24.8)		
	Incomplete secondary	18 (3.24)	2.95 (1.219)	0.000
	Higher	304 (54.7)		
Marital status	Single/unmarried	200 (36.0)		
	Married/married	281 (50.5)		
	Divorced	30 (5.4)	1.89 (0.952)	0.000
	Widow/widower	25 (4.5)		
	Unregistered marriage	20 (3.6)		
Assessment of the availability of laboratory tests	Completely satisfied	330 (59.4)		
	Satisfied, but partially satisfied	120 (21.6)		
	Rather unsatisfied	31 (5.6)		
	Not satisfied	25 (4.5)	1.82 (1.269)	0.000
	Difficult to answer	50 (9.0)		
Accessibility of medical care	Completely satisfied	300 (54.0)		
	Satisfied, but partially satisfied	150 (27.0)		
	Rather unsatisfied	50 (9.0)	1.80 (1.108)	0.000
	Not satisfied	30 (5.4)		
	Difficult to answer	26 (4.7)		

secondary education, 96 (17.3%); 281 (50.5%) were married. The level of accessibility of laboratory tests and medical care in the attached polyclinic showed that more than half were satisfied: laboratory tests for 330 (59.4%), medical care for 300 (54.0%).

Laboratory tests and medical care were fully considered accessible by the majority of male, 100.0% each, compared to females, 43.92% and 36.48%, respectively; 29.78% of females were partially satisfied with the accessibility of laboratory tests and 37.22% with medical care (Figures 1 and 2).
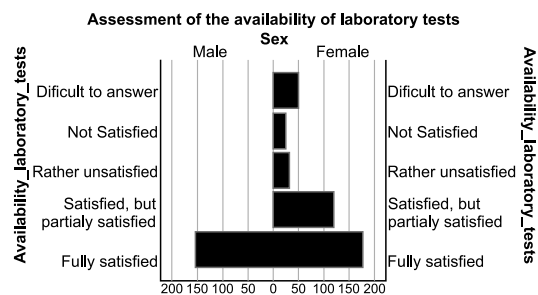

Figure 1. Opinion of respondents about availability of laboratory tests by gender
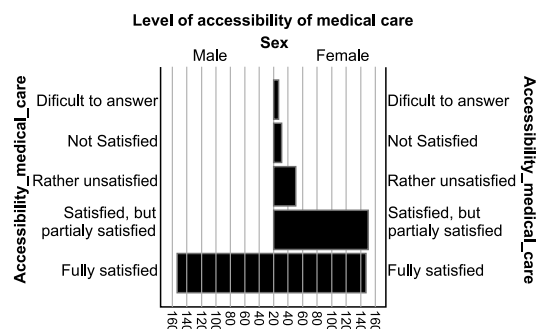

Figure 2. Opinion of respondents about availability of medical care in polyclinics by gender

The results of the study of respondents' answers regarding the duration of waiting time for certain services in medical organizations showed that 294 (53.3%) waited in line at the registration desk for less than 15 minutes, and 251 (48.3%) waited for a doctor for less than 1 hour (Table 2). Having made an appointment with a doctor, 460 (83.8%) patients got an appointment at the first call to the medical organization, and almost the same number of 470 (85.9%) were seen by a doctor at the appointed time, while the waiting time for a district doctor was up to 30 minutes for 373 (68.2%) patients; waiting time for a specialist doctor for 221 (41.1%) was more than an hour, and 169 (31.5%) respondents did not get an appointment on the day of application.

Table 2. Duration of waiting in the queue of a medical organization

The duration of waiting for certain services in medical organizations	The largest number of selected answers	Minimum time	Maximum time
How long have you been waiting in line at the reception?	up to 15 minutes	no queue	>1 hour
The waiting time for the doctor to whom you made an appointment (called to the house) from the moment of the appointment was?	<1 hour	<1 hour	≥24 hours
How much time did you spend, on average, waiting for the appointment of a district doctor (therapist, pediatrician, family doctor, in organizations?	up to 15 minutes	no queue	>1 hour
How much time has passed since the call was made to the district doctor (therapist, pediatrician, family doctor) before he came to your house?	not called	<3 hours	came the next day
How much time did you spend, on average, waiting for an appointment with a specialist doctor (neurologist, surgeon, ophthalmologist, otolaryngologist)?	>1 hour	>1 hour	>10 days
How much time did you spend waiting for the diagnostic tests assigned to you?	1 day	1 day	over >3 days

In the city polyclinic #3 in 2022 according to the plan was allocated, 838,362.50 thousand tenge, but as the data showed the actual amount increased 1 times and amounted to 966,057.95 thousand tenge on the following indicators: maternal mortality, preventable at the PHC level, child mortality from 7 days to 5 years, for the first time detected cases of malignant neoplasm visual localizations 1-2 stage, the level of hospitalization of patients with complications of diseases of the cardiovascular system (myocardial infarc-

tion, stroke), the proportion of children under 5 years of age hospitalized with complicated acute respiratory infections, the coverage of patronage visits to newborns in the first 3 days after discharge from the maternity hospital, and substantiated complaints (Table 3).

The obtained results of the analysis indicated the achievement of indicators of the result and will be directed to financial incentives and professional training of employees of the city polyclinics № 3 and №14 of Almaty (Table 3).

DISCUSSION

To investigate the accessibility and quality of primary healthcare within the compulsory health insurance system, a sociological survey was conducted among patients in primary healthcare settings. As part of the reforms initiated in the Republic of Kazakhstan, citizens were granted the freedom to select their preferred polyclinic and healthcare provider. In an effort to enhance the quality of medical services, per capita norm incentive components were introduced, incentivizing primary care physicians to deliver timely and affordable healthcare.

Several interconnected factors at individual, interpersonal, societal, and systemic levels influence the implementation, utilization, and sustainability of community health insurance programs (18)

The collective findings indicate that voluntary health insurance in Sweden primarily benefits individuals who are in good health and have higher socioeconomic status (18). A study conducted in

Table 3. Outcome indicators of the Incentive component of the per capita standard (PPCS) in City Polyclinics #3 and #14 of the Almaty City in 2022

Indicator	Amount PPCS thousands of tenge					
	City polyclinic #3			City polyclinic #14		
	Plan	Fact	Deviation (actual-plan)	Plan	Fact	Deviation (actual-plan)
Maternal mortality preventable at PHC level	838 362,50	966 057,95	127 695,45	438 337,50	442 829,78	4 492,28
Child mortality from 7 days to 5 years preventable at PHC level	838 362,50	966 057,95	127 695,45	438 337,50	442 829,78	4 492,28
Timely diagnosis of pulmonary tuberculosis	838 362,50	966 057,95	127 695,45	438 337,50	442 829,34	4 491,84
First detected cases of malignant neoplasm of visual localization 1-2 stages	838 362,50	966 057,95	127 695,45	438 337,50	442 829,78	4 492,28
Rate of hospitalization of patients with complications of cardiovascular diseases (myocardial infarction, stroke)	838 362,50	966 057,95	127 695,45	438 337,50	442 829,78	4 492,28
Justified complaints	838 362,50	966 057,95	127 695,45	438 337,50	442 829,78	4 492,28
Share of children under 5 years of age hospitalized with complicated acute respiratory infections	838 362,50	966 057,95	127 695,45	438 337,50	442 829,78	4 492,28
Coverage of patronage visits to newborns in the first 3 days after discharge from the maternity hospital	838 362,50	965 767,51	127 405,01	438 337,50	442 696,65	4 359,15

PHC; primary health care

Finland revealed that socio-demographic characteristics have a stronger influence on the uptake of voluntary private health insurance compared to public or private healthcare coverage (20).

Budgetary allocations to health insurance schemes have played a crucial role in advancing universal health coverage and preserving the progress made in compulsory health insurance within low-income European nations, particularly by extending coverage to those outside the formal workforce and vulnerable demographics (21).

Patients with lower incomes who frequently use public health services are less likely to transition to private healthcare or endorse private services (22) responsiveness, reliability, assurance and staff empathy. Moreover, further research is required to identify best practices for incorporating vulnerable populations into health insurance schemes (23,24).

Implementing flexible payment plans that allow individuals with limited financial means to pay in installments, subsidizing premiums for those in need, and eliminating co-payments are measures that can boost enrollment and utilization among economically disadvantaged individuals (25). Countries heavily reliant on out-of-pocket payments, including informal fees, to finance their overall healthcare expenditures are unlikely to achieve universal coverage. Reforms should encompass measures such as reducing medication costs, promoting rational medication use, enhancing administrative controls, and introducing incentives for providing quality care (26-28) .

This study's strengths lie in its comprehensive evaluation of medical organizations operating within the compulsory health insurance system, employing a comparative analysis based on outcome indicators, as well as conducting a sociological survey to gauge patient satisfaction with primary healthcare services. Limitations include the unavailability of data from all polyclinics in Almaty, Republic of Kazakhstan.

The study's findings authentically represent patient perspectives on primary healthcare within the compulsory health insurance system and can serve as a robust scientific basis for making operational and strategic management decisions, as well as guiding future research endeavors.

ACKNOWLEDGEMENTS

FUNDING

TRANSPARENCY DECLARATION

Conflict of interest: None to declare.

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