

## ON ISSUE OF HIGH-QUALITY STOMATOLOGICAL SERVICE IN UKRAINE

DOI: 10.36740/WLek202301110

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### ABSTRACT

**The aim:** To detect the main problems regarding available high-quality stomatological service in Ukraine and define their main solutions.

**Materials and methods:** The authors used general scientific methods of synthesis, generalization, scientific data interpreting, systemic approach method, medical statistic method, and analysis of the activity of state and private institutions dealing with stomatological service in Ukraine. The paper is based on the materials of a representative selective study of Ukrainian households, held by the State Committee of Statistics of Ukraine to study people's self-estimation of their health and the availability of certain medical services.

**Results:** Most citizens of Ukraine (60-80%) are treated in the state/public healthcare sector. Though, during the last century, a decrease in dental visits per citizen in the state and public institutions has been noted, as well as a decrease of all medical service types' volume, offered in the mentioned institutions. In Ukraine the observed trends are represented as the decrease in the network institutions number, insufficient budgeting of state/public medical institutions, prevailing commercial characteristics of stomatological service and people's low income, which leads to decreased affordability, and quality of medical service, thus negatively affecting people's health.

**Conclusions:** The fundamental studies of the quality assessment show that the medical service requires strong structure, process quality, and result quality. The quality of medical service organization is extremely important and it should be maintained high on all levels of management and treatment processes, regarding the conditions of medical process and resources of medical organizations. Medical service should be patient-centered. To solve the problem, the entire state system of quality management is required in Ukraine.

**KEY WORDS:** Stomatological service quality, state/public stomatological institutions

Wiad Lek. 2023;76(1):71-76

### INTRODUCTION

The main task of state healthcare policy is to answer the people's need for high-quality accessible and affordable medical care. Provision of high-quality and accessible/affordable medical service is a most important healthcare issue, management of which presents with difficulties.

According to professor V.D. Vagner, the main characteristics of the stomatological service quality are its safety, clinical and economic efficiency, as well as its timely character; while its criteria are: adherence to standards, clinical course without complications, and satisfaction of the patient with its results [1].

The authors consider that high-quality medical service is a timely medical service, provided by qualified medical personnel, which corresponds to the medical service standards. The accessibility/affordability and quality of medical service make up the main components of modern medical science.

The medical service quality is affected by various cause-effect factors. Professor A.L. Lindenbraten defines the following factors: the resource availability in the institution providing medical service; institutions and medical personnel motivation for optimizing their activity outcomes and the behavior of medical service customers. He regards medical staff as that with an important role, as the medical personnel must be high-qualified, which can be reached through improved quality of the basic and further continuous medical education as well as registering faults and errors of medical staff [4].

N.B. Pavlov et al. [7] consider that the stomatological service quality is affected by the prevention and treatment methods, materials and technologies, and the scientific support of the service. Of great importance are also management combined with professional standards, raising qualification and standard documents. Increased medical service expenditures make up an important condition of its improved quality.

The results of special epidemiological studies evidence about a rather high level of stomatological morbidity in Ukraine, which significantly exceeds that one in Europe. The incidence of dental caries of temporary teeth in 6-year-old children is 87.9% (in European Union countries 20%), with the “cariou, filled and extracted teeth” rate of 4.6; while the incidence of the permanent teeth caries in 12-year-old children is 72.3%, with the “cariou, filled and extracted teeth” rate of 2.75 (in European Union countries 1.5) [6]. In 2016 eighty-eight percent of Ukrainians were diagnosed with tooth caries, 86-90%-with parodontal diseases, 60-75% – with dental-jaw disorders, and 75-85% required dental prosthetics [2]. Poor stomatological health level detected in Ukrainians stipulates for high relevance of the need for stomatological service increased availability and improved quality.

Poor stomatological health, presumably that of children, badly affects their overall health throughout their life. The President of the Association of Ukrainian stomatologists I.P. Mazur states that “stomatology is not luxury, but the method of preserving people’s health” [5]. Thus, providing availability and high quality of stomatological service should be regarded not only as a medical, but significant medical-social and social-economic problem in Ukraine, which needs urgent attention.

The highest achievements in decreasing stomatological morbidity can be reached owing to the prevention of stomatological diseases. This needs the purposeful financing of the problem from the state and municipal budgets [2].

## THE AIM

The purpose of the study is to detect the main problems regarding the provision of available high-quality stomatological service in Ukraine and define the main solutions.

## MATERIALS AND METHODS

The authors used general scientific methods of synthesis, generalization, scientific data interpreting, systemic approach method, medical statistic method, and analysis of the activity of state and private institutions dealing with stomatological service in Ukraine. The paper is based on the materials of a representative selective study of Ukrainian households, held by the State Committee of Statistics of Ukraine to study people’s self-estimation of their health and availability/affordability of certain medical services. The performance analysis of state(public) and private stomatological institutions,

as well as the extent of certain stomatological services delivered to the people of Ukraine is based on the reports № 20 «Reports of legal bodies, regardless of the registered law state, and physical body-entrepreneur, dealing with medical practice” from 2008, 2012, 2017, 2018, 2019 and 2020, represented in the statistical reference books of the Center of medical statistics of Ministry of Health of Ukraine [9-11]. The analysis is based on statistical frequency distribution, tabular summary, generalization, and comparison. The availability data of stomatological service were analyzed by the representative selective studies of households, held by the State Committee of statistics of Ukraine in 2020, published in the statistical reference book “People Self-estimation of health and availability of certain types of medical service” [8]. These selective surveys of households regarding their health and availability of certain types of medical service make up a theme module of permanent study of the households life conditions. The selective combination of the studied households represents all population of Ukraine.

## RESULTS

Nowadays, there are no definite criteria for evaluation of the medical service quality (including the stomatological one), which can be related to diagnosis, treatment, prevention, and disease outcomes. The issue needs analysis of individual factors by experts, thorough medical documentation analysis, and evaluation by the medical society. Though, a logical connection between the notions of “Stomatological service quality” and “Optimizing stomatological service” is evident. Due to optimization, the resilience of basic medical institutional characteristics increases, as well as the quality of provided services, their correspondence to the customers’ requirements, environmental requirements and social responsibility; and medical personnel labor safety and health safety also.

The thorough studies of the healthcare service quality were held by A. Donabedian [13]. In the late 60ies of the previous century, he was the first to suggest the systemic classification of the quality analysis methods, which was later called the “Donabedian triad” (structure-processes-results) and it allowed to estimate the quality criteria.

The Donabedian triad is still relevant nowadays:

- structure quality is represented with the personnel qualification, availability and condition of the equipment as well as its rational use;
- process quality means that the medical service quality was appropriate when the treatment and diagnosis were appropriate to the patient’s condition,

**Table I.** Dynamic pattern of the stomatological services volume, offered to the Ukrainians in state/public stomatological institutions\*

Value	2008	2012	2017	2018	2019	2020
Mean average of stomatological visits made by 1 citizen	1.1	1	0.8	0.8	0.7	0.4
Mean average of stomatological visits made by 1 adult	1	0.9	0.7	0.7	0.6	0.3
Mean average of stomatological visits made by 1 child	1.7	1.6	1.3	1.2	1.1	0.5
Specific gravity of regular stomatological check-ups among the adults (in %)	22.1	21.3	17.2	15.5	13.4	6.6
Specific gravity of stomatological sanations among the adults (in %)	22.1	23.6	18.7	17.3	15.1	7.6
Specific gravity of regular stomatological check-ups among the children (in %)	70.9	69.5	56.4	51.7	43.1	17.2
Specific gravity of stomatological sanations among the children (in %)	70.9	41.9	33.8	30.9	25.9	12.6
Number of stomatological operations in outpatient departments (per 10 000 people)	85,6	79,8	62,2	59,1	56,42	41,2
Number of children who completed orthodontic treatment (per 10 000 children)	66.1	61.6	58.8	53.4	50.5	26.3
Number of adults with made dental prostheses (per 100 people)	1.4	1.2	0.8	0.8	0.7	0.5

\*The table is based in the data of the Center of medical statistics of Ministry of Health of Ukraine.

**Table II.** Distribution of the services provided to the adult Ukrainians between the state/public and private stomatological institutions (in%)\*

Type of stomatological institution	2008	2012	2017	2018	2019	2020
<b>Stomatological visits (in %)</b>						
State	87.3	84.4	79.8	77.3	73.4	63.1
Private	12.7	15.6	20.3	22.7	26.6	36.9
Totally	100	100	100	100	100	100
<b>Stomatological sanations, during regular check-ups and patients' referrals (in%)</b>						
State	86.6	83.1	78.0	74.5	70.0	56.5
Private	13.5	16.9	22.0	25.5	30.0	43.5
Totally	100	100	100	100	100	100
<b>Dental caries treatment (in %)</b>						
State	83.4	79.5	74.2	71.5	65.3	51.4
Private	16.6	20.5	25.8	28.5	34.7	48.6
Totally	100	100	100	100	100	100
<b>Oral mucosa diseases treatment course (in %)</b>						
State	83.0	80.7	73.0	71.3	58.24	41.41
Private	17.0	19.3	27.0	28.7	41.76	58.59
Totally	100	100	100	100	100	100
<b>Stomatological operations (in%)</b>						
State	83.0	80.7	73.0	81.2	70.7	73.1
Private	17.0	19.3	27.0	18.1	28.4	26.0
Totally	100	100	100	100	100	100
<b>Stomatological prosthetics (in%)</b>						
State	70.0	58.2	47.7	43.0	40.4	32.5
Private	30.0	41.8	52.3	57.0	59.6	67.5
Totally	100	100	100	100	100	100

\*The table contains the data resulting from the individual calculations by the authors, based on the information from the Center of medical statistics of Ministry of Health of Ukraine.

this is the basic principle of the process approach to the quality provision system;

- result quality is a component of medical service that describes the relation between the achieved results with those which were possible to achieve.

It is worth mentioning that the subjective evaluation of the patient is affected by the criteria of a service organization, which are: availability, timely character, safety, succession and persistence, efficiency, patient-centered character as well as scientific-technical characteristics.

Regarding the medical service quality, three main tasks should be recalled: evaluation, provision and management. The evaluation, expertise, audit, and supervision make up the initial stage of the quality assessment activity. If it receives no further continuation, without recommendations on improvement, and assessment of the process management applied technologies, the activity seems to be almost unproductive.

Quality provision is mainly the issue of appropriate resource supply, professional competence and training of medical personnel, application of appropriate technologies.

A crucial component of the medical service quality is its availability (with accessibility and affordability). According to some selective studies of the household, held by the State Committee of Statistics of Ukraine in 2020 (38105 respondents were questioned, considered representatively as the whole population of Ukraine), the share of households in which any member couldn't receive medical service, buy drugs or medical supplies during last 12 months made up 19.2%.

Furthermore, 41.2% of respondents, among those who stayed without medical service, mentioned poor availability of stomatological service, and almost one-third of them – missed dental prosthetics (29.6%).

Among all questioned respondents, the share of those who couldn't make a dental visit in 2020 made up 7.9%, have prosthetics - 5.7%. So, in 2020 about 13.6% of respondents, or one in seven surveyed people couldn't obtain stomatological service, upon the necessity. The main cause of stomatological service poor accessibility (affordability), as 95.1% of respondents consider, was its extremely high cost.

The issue of affordability of stomatological service for most people of Ukraine has been registered, while we note the presence of numerous state (public) stomatological institutions in the country. In 2020 there were 1355 state and public institutions in Ukraine, providing stomatological service, with 168 specialized stomatological clinics, and 1187 general medical institutions with stomatological rooms in their structure. Recently, the number of specialized stomatological policlinics has considerably decreased due to re-organization of

policlinics into departments of central regional or district hospitals. The significant decrease in the number of institutions with stomatological departments (rooms) has been mainly predisposed to the rural outpatient departments, which were joined, as the structural units, to the Centers of primary medical service or other institutions, considered before as separate institutions.

Recently private stomatological service has significantly expanded. In 2020 stomatological service in Ukraine was provided by 617 stomatological policlinics and 4467 stomatological private practices. The relation between state stomatologists and private specialists in 2020 was 59.7% to 40.3%.

The authors revealed that, despite the presence of a vast stomatological institutions network within the Ministry of Health of Ukraine, during 2008-2020 a significant decrease in state and public stomatological services volume was noted. In particular, the number of dental visits per one Ukrainian decreased from 1.1 in 2008 to 0.4 in 2020, among adults from 1.0 to 0.3 visits, and among children from 1.7 to 0.5 visits respectively. During that period the volume of the preventive services offered by state and public stomatological institutions has significantly decreased. So, the specific gravity of regular check-ups among adults has decreased from 22.1% in 2008 to 6.6% in 2020, and among children, respectively, from 70.9% to 17.2%; the specific gravity of sanations fell from 22.1% to 7.6% among adults and from 70.9% to 12.6% among the children (See table I).

The significant decrease in surgical, prosthetic, and orthodontic stomatological services in state (public) institutions should be also mentioned. In 2020, compared to 2008, the number of stomatological operations decreased twice (from 85.6 to 41.2 per 10 000 people), the number of children who received orthodontic treatment by 2.5 times (from 66.1 to 26.3 per 10 000 children), and the number of adults after stomatological prosthetics by 2.8 times (from 1.4 to 0.5 per 100 people).

The COVID-10 epidemic represents the cause of an abrupt decline in dental visits and total stomatological service volume in 2020. Though, the trend for such decrease appeared even before the epidemics, which indirectly evidences about decreased availability of stomatological service, caused by reduction of stomatological practices, deficiency of state budgeting for the stomatological service as well as decrease of expenses for free prosthetics and raised prices for orthodontic and other positions.

In Ukraine, the unsatisfactory quality of stomatological service in state (public) institutions is the basic cause of patient churn to private clinics.

The results of the performed analysis of stomatological services distribution between private and state

stomatological institutions (See table II) have shown that in 2020 private clinics dealt with 36.9% of all adult dental visits, 67.5% stomatological prosthetics cases, 48.6% of caries treatment cases, 43.5% cases of regular dental sanations and sanations after stomatological appointments, 26.0 % of out-patient stomatological operations, 58.6% of oral mucosa treatment referrals. A steady trend for increase of the private stomatological practice share within overall stomatological health service was observed in period of 2008-2020. Private stomatological institutions fortified their role in the prosthetic stomatological service branch.

The medical service quality considerably depends on the budgeting of health care institutions. In European countries, healthcare budgeting equals from 6-7% to 12% of Gross National Product. In Ukraine the state budgeting makes up less than 3%, and, consequently, this impedes with predisposition for the medical institutions high service quality [3].

## DISCUSSION

Nowadays issues of quality and safety of medical service are regulated by strict requirements, which need modern facilities, implementation of advanced treatment methods, adoption of the legal-standard principles and financial support of the treatment and diagnostics.

The Organization Orders of Ministry of Health of Ukraine play significant role in providing effective stomatological institutions function as well as high-quality medical service. It is also important to monitor how the Orders are implemented in practice.

Professor A.V. Stepanenko [3] considers that the Order of Ministry of Health of Ukraine issued on 28.09.2012 №752 «On the sequence of medical service quality control» includes most world -famous methods of such control: external and internal, medical personnel self-assessment, expert assessment, clinical audit, quality indicators system monitoring and certification. Though, in real practice, and the procedure of clinical audit is performed only in certain Ukrainian healthcare institutions, which is, first of all, related to low awareness about its mechanisms, poor understanding of indicator roles in local protocols (recently the Ministry of Health of Ukraine cancelled this paragraph), as well as the low motivation of medical teams.

This is confirmed by Andrey Guk, vice-head of State Institution "Institute of neurosurgery after academician A.P. Romodanov of NAMS of Ukraine", who writes that "unfortunately, there is only one acting Order №752 of Ministry of Health of Ukraine issued on 28.09.2012 «On the order of medical service quality control", which

contains only general approach theses, emphasizes clinical-expert commission importance and doesn't stipulate for the prevention» [3].

The Western Europe stomatological clinics are characterized by widely implemented guaranteed quality standards, which were accepted according to the ISO 9001 and 9002, with obligatory medical insurance system alongside. For example, the an obligatory medical insurance covers full spectrum of stomatological prosthetic service. In Switzerland the stomatological prosthetic service is financed by the hospital coverage. Medical service in Canada is presumably covered by state financing and the medical insurance system [12].

The perfection of the stomatological service quality management is related to implementation of the management progressive technologies within 4 basic aspects: «medical service», «personnel», «patients» and «finances».

All countries face the challenge of poor availability, affordability and quality of medical service, but each country is characterized by its own peculiarities, and Ukraine must find and adopt effective methods of the medical service internal and external quality control perfection.

To conclude, emphasis should be put on the fact that under conditions of the modern healthcare system development, medical service quality should be high, with its control on all levels of management and treatment process. The medical service quality control should monitor such components as the medical service conditions, medical institutions processes and resources, as medical service should be patient-centered.

## CONCLUSIONS

1. Legislative and standard basic principles, regulating the issue of providing medical services in Ukraine, as well as their safety, require modernization, in order to update the documents concerning the sequence of stomatological service, clinical recommendations, and standards.
2. Quality and safety of medical stomatological service cannot be provided without accepted decisions of the system effective functioning key issues: sufficient budgeting of the stomatological state/public institutions, renovation of their facilities, and actualization of the personnel management.
3. There is a strong need for the independent state system of medical service management and control in Ukraine, which needs generalization of the European Union countries' experience and adapting the best of those practices.

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## Conflict of interest:

The Authors declare no conflict of interest.

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Received: 12.01.2022

Accepted: 14.11.2022

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A - Work concept and design, B – Data collection and analysis, C – Responsibility for statistical analysis, D – Writing the article, E – Critical review, F – Final approval of the article

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