

## ANALYSIS OF MEDICO-ECONOMIC EFFICIENCY OF DENTAL CARE PROVIDED BY HEALTH INSURANCE PROGRAM

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### *The aim*

of this work was to calculate health and economic efficiency of dental care provided by Health Insurance Program to adults with rehabilitation of the oral cavity.

### *Methods*

In this study we used the method of clinico-economic analysis.

### THE RESULTS OF THE STUDY

indicate that in the structure of morbidity by the appealability of the adult population in the dental clinic, the largest share is caries and its complications — 96.3%, diseases of periodontal tissues correspond to 3.6% and diseases of the oral mucosa — 0.3%. The indicator of the population's appeal for dental care is 506.4 per 1000. 94.8% of the population need sanitation in the oral cavity, 31.6% of the adult population are being sanitized from the number of people in need. The indices show that 2082.68 teeth were cured and 515.29 teeth were removed in 1000 people (table 1, table 2).

During the sanitation 1.2 teeth, afflicted with caries, was registered at each patient. Complications of caries among the adult population are 0.85 teeth (pulpitis, periodontitis, to be treated) and 0.52 teeth to be removed. In one visit, dentists, therapists, surgeons, physiotherapists are 8.43 services. To sanitize the oral cavity of 1000 adults in case of tooth decay with caries and its complications took 2908.48 visits, 27424.45 services, 30244.89 standard conventional units (SCU) [1].

The greatest number of services, including visits, falls on one patient with periodontitis of teeth — 14.96, followed by services rendered to a patient with pulpitis of teeth — 7.03, then — with deep caries — 2.57, middle caries — 18.75, superficial — 1.00, the initial caries in the clinic is not diagnosed.

On average, complete treatment (removal) of one tooth had to 1.12 visits, 10.56 services and 11.64 SCU.



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The greatest number of visits is required for the treatment (removal) of the tooth, damaged by periodontitis — 1.68, and in case of treatment, completed by the imposition of a seal, there are 2.40 visits, and ended by removal — 0.99. A significant difference is observed in the number of services, which, with conservative treatment of periodontitis, is  $24.83 \pm 0.86$ , and when removed —  $5.62 \pm 0.27$ , there is also a difference in the labor costs of dentists, which is equal to  $29.63 \pm 0.82$  SCU and  $6.17 \pm 0.28$  SCU (at removal).

To complete the sanitation of the oral cavity of 1000 patients (when the tooth is damaged by caries and its complications) 2082.68 seals were applied, including surface caries — 294.16, medium — 451.20, deep — 452.82, pulpitis — 427.29, periodontitis — 457.21. [2]

The structure of the seals is dominated, made of a composite of Russian origin, which makes up slightly

**Table 1.** The indicators illustrate the volume and types of dental care provided to the adult population in the defeat of teeth caries

The indicators		Surface caries		Medium caries		Deep caries	
		services	SCU	services	SCU	services	SCU
1	Reception dentist, primary	157.66	158.1	219.15	222.41	171.04	171.58
2	Total visits	160.0	159.77	232.14	232.16	246.36	228.07
3	Total services	831.14	784.79	1643.36	1531.06	2320.69	2517.26
4	Total services, including visits	991.14	944.56	1875.50	1763.22	2567.05	2745.33
5	Total seals	294.16	-	451.20	-	452.82	-
6	Teeth removed	-	-	-	-	-	-
7	Services in 1 visit	5.20	-	7.08	-	9.32	-
8	Visits for treatment of 1 tooth (seals + delete)	0.54	-	0.51	-	0.54	-
9	For a complete treatment of 1 tooth (services, SCU)	3.37	3.21	4.16	3.91	5.67	6.06
10	SCU on 1 service	-	0.95	-	0.94	-	1.07

**Table 2.** The indicators illustrate the volume and types of dental care provided to the adult population in the defeat of teeth caries complications (per 1000 sanitized)

The indicators		Pulpitis		Periodontitis	
		services	SCU	services	SCU
1	Reception dentist, primary	219.32	219.32	445.06	445.06
2	Total visits	697.14	577.68	1572.84	1294.95
3	Total services	6329.04	7416.11	13391.74	15503.04
4	Total services, including visits	7026.18	7993.79	14964.58	16797.99
5	Total seals	427.29	-	457.21	-
6	Teeth removed	36.35	-	478.64	-
7	Services in 1 visit	9.08	-	8.51	-
8	Visits for treatment of 1 tooth (seals + delete)	1.50	-	1.68	-
9	For a complete treatment of 1 tooth (services, SCU)	15.14	17.23	15.99	17.95
10	SCU on 1 service	-	1.14	-	1.12

more than half of all the seals — 51.75%, mostly «Silicin» and «Silidont». Then follows the seals made of imported composite — 48.19%, mainly «Compo-light» and «Herculite», cement seals of the import make only 0.06%.

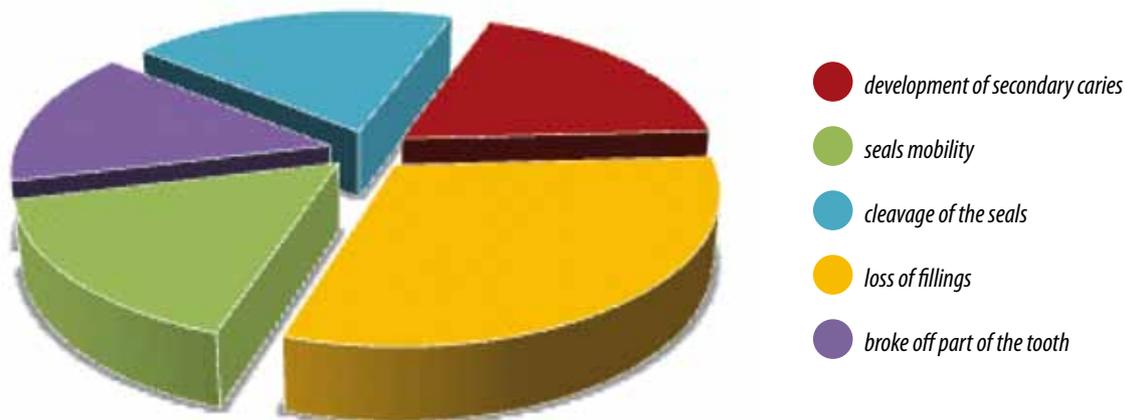
Ratio of the number of teeth treated for uncomplicated caries to the number of teeth with complicated caries is 1.36:1.0 at sanitized patients. The average number of teeth treated in one visit in sanitized patients is 15.8%.

Evaluating the medical effectiveness of treatment provided with tooth decay caries, should be noted that preventive measures for the adult population are extremely rare. Complications of caries developing in 36.81±0.85% of the cases, 884.5 teeth affected by pulpitis and periodontitis (per 1000 sanitized) was removed 58.26% (515.29) of the tooth.

X-ray control revealed a low quality of root canal filling — only 18.3% of single-root teeth and 4.8% of multi-root teeth were satisfactorily obturated. The expert integrated assessment (out of five criteria), which characterizes the quality of 630 seals supplied in the dental clinic, indicates that, on average 31.11 ± 1.84% of the seals were performed with disorders, combining several defects (mobility, development of secondary caries, cleavage of the seals and others), 46.67% need to be replaced (Figure 1).

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Supposed reasons for poor quality of endodontic treatment may be a low level of professional skill, financial support or non-compliance with technology. In most cases, it is necessary to note the absence in the



*Fig. 1. Disadvantages of the seals*

medical card of dental patient data description x-ray examination. This fact indicates not only to the absence of X-ray diagnostics, but also about the absence of X-ray-quality control of the performed endodontic treatment. [3]

On the basis of the study we would like to note, that when preparing plan for the development and performance of «Dental clinic №3», Astrakhan, it is important to consider the proposed indicators. These indicators reflect the types, the structure and volume of dental care provided during oral sanitation of the adult population, the algorithms for analyzing medical efficacy in the rehabilitation of the oral cavity. Also reflect the analysis of economic efficiency the renovation of the oral cavity of the adult population and carrying out individual primary prevention.

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