Miscellaneous

General Aspects on Oral-Dental Care Social Services for Children in Galati County, Romania

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Abstract: This presentation aims to describe the structure and treatments supplied by oro-dental providers (dentists) working within the social health (publicly funded) insurance scheme in Galati county for 0-18 year-olds over a four year period. Galati County is representative of Romania in terms of its population demographics, the number of inhabitants and the need for social oro-dental care. Data on activity were collected from the treatment and activity records of the dentists who provided care within the national health insurance scheme. It provides an overview of the current state of publicly funded dental care for 0-18 year-olds. As the data were consolidated and no patients could be identified from the data, it was deemed unnecessary to seek ethics approval for the study. The number of dentists (117) working for the public insurance scheme remained constant over the four years period. Eighty percent of the work that they performed on 0-18 year-olds involved active treatment of teeth (fillings, etc). Those who work for the National Health Insurance scheme are limited to the provision of care and treatment within a maximum of 200 Euros per month in fees and within this ceiling have limited capacity to provide services.

Keywords: social services; social health insurance; structure indicators

Jel Classification: G2; I13

Introduction

Worldwide dental problems, particularly cavities and parodonthopaties have a top place in the morbidity of the population, with a well-determined influence on the state of immuno-prophilaxy of certain organs and systems (digestive, cardiovascular, endocrine systems). Special attention should be granted to the 0-18 age group, as specialised literature has shown that oral pathology in children and teenagers is very high, due to both the changes in dental status during this life stage, and the considerable differences in the access to oral care services.

In this context, WHO (2002) recommends the development of oral health services focused on priority directions for the control of oral problems, and the ease of access to prophylactic and treatment services for this age group.

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In Europe the systems of oro- dental care are financially and organisationally modelled on two main topologies: the model of health care insurance (Bismark) and the model of the national health care system (Beveridge). Both models provide most services with a reimbursement percentage of up to 50% - 100% for children.

In Romania, the social health care insurance is the main system whereby the population may get access to health care services, including a service package for dental care divided into prophylaxis, treatment, and emergency care for the 0-18 and over 18 year-olds. Children are provided the entire range of specific services with a reimbursement of up to 100%. Thus, financial cover is also provided for services involving the dental technique laboratory, for orthodontic apparatuses and prosthetics.

To date there are no national studies analysing the time evolution of oro-dental care services provided by the Romanian social health care system. A county of the size of Galati ranks among the first ten in the country in point of population - 544000 inhabitants – and has a number of cases pertaining to the 4-19 age group susceptible of a rich oro-dental pathology of 98443; thus it may provide a general image of the present state of the oro-dental assistance within the framework of the Romanian health care insurance system as a result of the present study.

The purpose of this study is to review the types of oro-dental services provided to the 0-18 year-olds by the health care insurance.

The analysis of the oro-dental services was performed by using specific indicators: structure indicators, indicators of prophylactic orientation. The chosen method allows for the comparison of basic information obtained by statistic calculations with the standards.

The topic under analysis is the oro-dental services provided by various dentists in the county of Galati.

Thus, the services provided by a slightly variable number of doctors under contract with the National House of Health Care Insurance (CNAS) were analysed per year.

Year	**2008**	**2009**	**2010**	**2011**
No. of dentists	122	122	117	105

The information background consisted of the statistical data resulting from the services reported during these years.

The specific indicators used are:

- *Structure indicators for treatment activities* (S1 - S6) representing the ratio of certain groups of procedures out of the total treatment services.

S1 – the percentage of consultations (%)

S2 – the percentage of orthodontal treatments (%)

S3 – the percentage of parodontal treatments (%)

S4 – the percentage of surgical procedures (%)

S5 – the percentage of orthodontic treatments (%)

S6 – the percentage of prosthetic treatments (%)

The standards of performance are: S1 – 12%; S2 – 38%; S3- 15%; S4 – 8%; S5 + S6 – 27%.

When establishing the performance standards it is taken into account that the finite procedures account for about 35% of the dentist's entire activity, the remainder being unfinished procedures. The favourable evolution of these indicators to the purpose of reducing morbidity through oral disease is the following: decreasing the number of primary consultations, surgical treatments and prosthetic services; increasing the number of orthodontal, parodontal and orthodontic services.

- *Structure indicators for prophylactic activities (S1p – S4p)* represent the ratio of certain groups of procedures out of the total prophylactic activities.

S1p – the percentage of prophylactic consults (%)

S2p – the percentage of professional dental brushings (%)

S3p – the percentage of topical fluoridation procedures (%)

S4p – the percentage of sealing procedures (%)

The favourable tendency is seen in the decrease of the prophylactic consultations and the increase in the other service types.

- *Prophylactic indicators (of prophylactic orientation OP1 – OP4)*

OP1 – the ratio between the total number of finite services for the simple fillings and those for the complex fillings. The values above 1 refer to a prophylactic attitude, and those equal to and under 1 signify non-prophylactic activity, hospitalisation inefficiency or hospitalisation absence.

Performance standard – a ratio above 1 (as high as possible).

OP2 – the ratio between the total number of obturations (for the simple and the complex fillings) and the total number of extracted teeth. The values above 1 signify a prophylactic, conservative attitude, and the values equal to and below 1 signify a non-prophylactic attitude.

Performance standard – a ratio above 1 (as high as possible).

OP3 – the ratio between the extracted teeth and the number of reconstructed missing teeth.

Values above 1 indicate a non-prophylactic orientation, while those equal to 1 show a good prophylactic activity; there can be no values below 1 for this indicator.

Performance standard – ratio equal to 1.

OP4 – the ratio between the number of prophylactic services and the number of therapeutic services.

Values above 1 signify a predominantly prophylactic activity. Values under 1 signify the presence of therapeutic acts to the detriment of prophylactic ones.

Performance standard – a ratio above 1.

Results

The evolution of the structure indicators for the curative activities may be seen in Table 1.

Table 1. Structure indicators for the curative activities

Indicator	2008	2009	2010	2011	High standard	Final results	Trend
S1 - % consultations	1.31% 390	0.11% 313	1.09% 364	1.62% 468	> 12	Increase	Reduction
S2 - % dental treatments	60.64% 22350	56.615 18108	55.9% 17102	53.2% 14913	> 38	Reduction	Increase
S3- % periodontal treatments	5.45% 1795	6.58% 2356	6.04% 1886	5.93 1826	~15	Increase	Maintenance
S4 - % surgical procedures	18.56% 7076	18.03% 6148	17.20% 5725	15.91% 4581	< 8	Reduction	Reduction
S5 + S6 - % orthodontic procedures (S5) + prosthetic (S6)	1.092% 418 - 0.08% 32 - 1.012% 386	0.84% 289 - 0.13% 45 - 0.71% 244	0.93% 311 - 0.27% 91 - 0.66% 220	0.99% 287 - 0.34% 98 - 0.65% 189	> 27	 Increase Reduction	 Increase Reduction

- The number of consultations, new cases of patients increased by 0.31%.

- The number of odontal treatments gathering all the procedures for simple and the complex fillings decreased by 7.44%.
- The number of parodontal treatments cumulating procedures of dental plaque removal, alveolar curettage, and medication of stomatites increased by 0.48%.
- The number of surgical procedures including the procedures of simple and complex extractions for deciduous and permanent teeth decreased by 2.65%.
- The number of orthodontic treatments, i.e. mobile braces increased by 0.26%.
- The number of prosthetic treatments viz. fixed prosthetics for permanent teeth decreased by 0.36%.

For the prophylactic activity the structure indicators have the time evolution shown in Table 2:

Table 2. Structure indicator for prophylactic activities

Indicator	2008	2009	2010	2011	Final results	Trend
S1p - % prophylactic consultations	77.28% 6837	71.74% 6357	64.68% 5057	58.94% 3768	Reduction	Reduction
S2p - % professional brushing	8.41% 592	8.26% 732	9.69% 758	10.98% 702	Increase	Increase
S3p - % local fluoridation	6.39% 359	5.66% 502	10% 610	10.14% 649	Increase	Increase
S4p - % sealing	11.3% 796	13.04% 1156	16.69% 1305	17.08% 1092	Increase	Increase

- The number of prophylactic consultations decreased by 18.3%.
- The number of professional brushings increased by 2.57%.
- The number of topical fluoridations increased by 3.75%.
- The number of sealings increased by 5.8%.

The structure indicators for the entire evolution evince the following:

Table 3. Prophylactic indicators (prophylactic orientation)

Indicator	2008	2009	2010	2011	High standard	Final results	Orientation
OP1 – no. filling of simple / complicated cavities	3.35	3.39	3.76	3.76	As big as possible improper ratio	>1	Prophylactic
OP2 – total no. fillings / total no. extracted teeth	1.45	1.35	1.43	1.26	As big as possible improper ratio	>1	Prophylactic
OP3 – total no. extracted teeth / no. absent restored teeth	1.39	1.68	1.6	1.7	Equivalent ratio	>1	Non-prophylactic
OP4 – no. prophylactic services / no. curative services	0.24	0.25	0.23	0.22	As big as possible improper ratio	<1	Non-prophylactic

- The number of obturations for the simple cavity increased by 0.41%.
- The total number of obturations decreased by 0.19%.
- The number of extracted teeth rose by 0.31%.
- The number of prophylactic services decreased by 0.02%.

Discussion

Oro-dental healthcare is dominated by curative therapeutic acts, accounting for about 80% of the total dental services for the 0-18 year-olds.

The values of the structure indicators for curative service evince the following:

- High-performance standards only for odontal treatments, but against a background of regression in time of 7.44%.

- Favourable trends for surgical procedures (decrease), orthodontic procedures (increase) and prosthetic procedures (decrease).

The primary prophylactic activity is under-represented, only 20% out of the total procedures for this age group; the structure indicators in this case show the following:

- Favourable trends for all the service types.
- Every year a top spot is assigned to prophylactic consultations which include, besides the determination of the index of bacterial plaque and gum inflammation, the education for oral health. Taking into account the age group for this type of oral health education, the educational effort may be salutary, as education in itself as a process may lead to durable results.
- the slightly decreasing trend over the analysed period is compensated by the 5.78% increase in the sealing procedures, which is one of the most important procedures of preventing tooth decay in children.
- a favourable evolution for the topical fluoridation procedures is all the more beneficial as in Romania there are no oral prevention programmes through mass fluoridation (like water, milk, salt fluoridation).

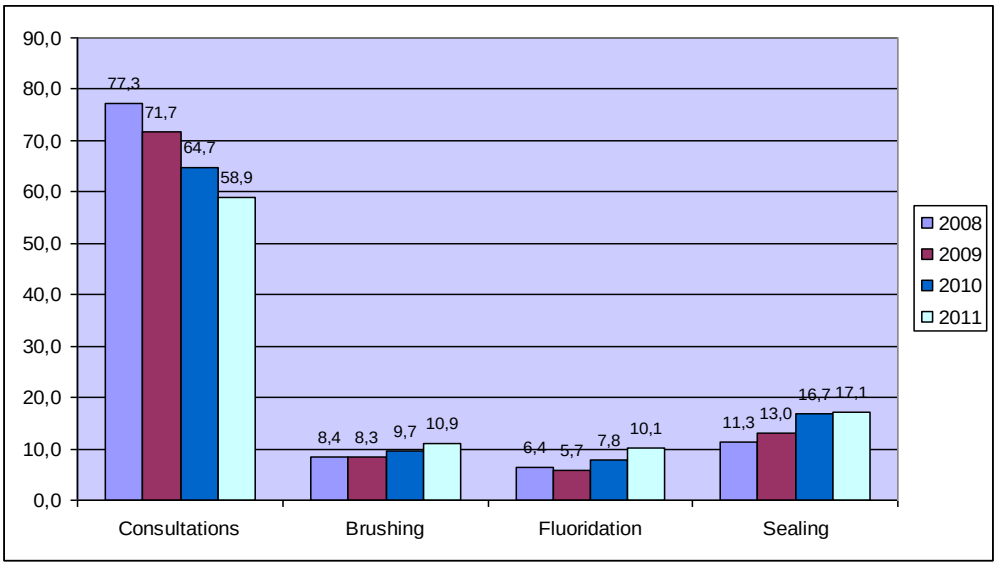

Figure1. The evolution of the prophylactic services in the health care system

The indicators of the entire range of dental services show the following:

- the prophylactic trend of the activity from the point of view of simple cavity obturations as compared to complex cavity ones and the total number of obturations as compared to extracted teeth;
- the non-prophylactic trend seen in the low number of restorations of the extracted permanent teeth as compared to the total number of curative services.

Conclusions

The correlation of several specific indicators for the oro-dental services in the county of Galati over a period of 4 years (2008-2011) evinced the following aspects:

- In most of the services provided the performance standards are not reached;
- There is a prophylactic-curative orientation and curative-conservative of the providers' activity, but without notable time evolutions;
- the data obtained cannot suggest a lack of efficiency as the activity reported by the service providers is within the limits of the contracted ceiling value, and does not include the extra activity above this ceiling;
- although the health services only account for 15-20% in the health state of the population, the optimisation of these services from the point of view of orientation and structure correlated with an intense financial effort may have a positive impact on the population's oro-dental health.

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