

ASSESSING THE CONTRIBUTION OF DIABETES IN THE COST OF MEDICAL SERVICES FINANCED BY INSURANCE COMPANIES

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Introduction

Most health care managers are well aware of the problem of latent flowing of undiagnosed diabetes which greatly exacerbates the diseases of various organs and systems, masked in the structure of morbidity and mortality taken into account as from various causes [3]. Planning for financing preventive events in the field of diabetes is carried out in many ways. According to the author this work will provide a formal picture of the economic losses caused by diabetes in Russian Federation which can be a breeding ground for a more long-term research for several years including the correlation with the volume of planned activities on prevention.

Goals of this study are to analyze the registers that provided by medical organizations within the framework of the program of «state guarantees» (financed by insurance companies) in order to establish the presence and degree of influence of diagnosed diabetes in a patient in the cost of services provided, including in other nosology, with outpatient and inpatient treatment.

Materials and methods. Author has analyzed the registers that was generated and sent by medical services to the insurance company to pay for the medical organizations of the Sverdlovsk region. On the basis of a unique patient identifier lists of services were formed bound to a particular patient. For further analysis patients were divided into two groups: those

who had treatment for a year in health care organizations regarding diabetes (codes ICD-10: E10.h, E11.h, E12.h, E13.h, E14.h) and others. Analyzed information contained gender and age. The accounting part contains the type of medical service provided and its cost. In the absence of significant changes in the analyzed period in the tariff policy when using absolute terms, cost of ruble inflation component is not taken into account.

Following software was used for data analysis: Oracle Database relational database management system, Microsoft Excel.

Results and discussion

474,074 seek medical help for the year, receiving in average 1.99 to 0.73 outpatient services in a hospital environment. The average cost of services amounted to 200 rubles for the service in the clinic, and 6,675 rubles for the service in a hospital (hereinafter - the cost per case / integrated service).

Among the 14,309 patients suffering from diabetes (those who turned a year for diabetes and its complications), the average multiplicity of receiving services and their cost is much higher and amounts to 2.9 hits per year and 304 rubles in the framework of outpatient help 1.24 hospitalizations per year and 11,979 rubles in the hospital.

In the category of patients with diagnosed diabetes uptake of outpatient care in one and a half times higher than the regional average, often 70%, these patients are hospitalized.

Table 1. Average specific indicators of the quantity and value of the services received in an outpatient setting

Age group (years)	The average number of services		Average cost of services	
	diabetics	population	diabetics	population
0–17	2.48	3.95 (+62.8%)	289.98	496.53 (+57.4%)
18–39	2.13	2.92 (+72.9%)	201.14	298.33 (+67.4%)
40–59	2.11	2.89 (+73.0%)	197.42	274.95 (+71.8%)
60+	1.69	2.4 (+70.0%)	170.30	232.14 (+73.4%)

Table 1 presents data on the average number and value of consideration received outpatient services from the general population and the category of people with diabetes. Number of services received the first group is superior to second 62-73%, the average cost of these services is also higher at 57-74%. Intensity of care and its cost in the transition to older age groups decreased.

Table 2. Average specific indicators of the quantity and value of the services received in a hospital

Age group (years)	The average number of services		Average cost of services	
	diabetics	population		diabetics
0–17	0.90	1.64 (+54.9%)	6,890.70	13,870.82 (+49.3%)
18–39	1.00	1.48 (+67.6%)	7,770.72	12,956.11 (+60.0%)
40–59	0.82	1.27 (+64.6%)	8,501.06	14,075.07 (+60.4%)
60+	0.52	0.89 (+58.4%)	5,333.20	9,275.72 (+57.5%)

Table 2. shows that medical assistance in a hospital saved average more than half of frequent hospitalizations and expensive contingent suffering from diabetes. In this age, these figures are down slightly which is probably due to the more frequent acute diseases and exacerbation of chronic diseases that require treatment in a hospital.

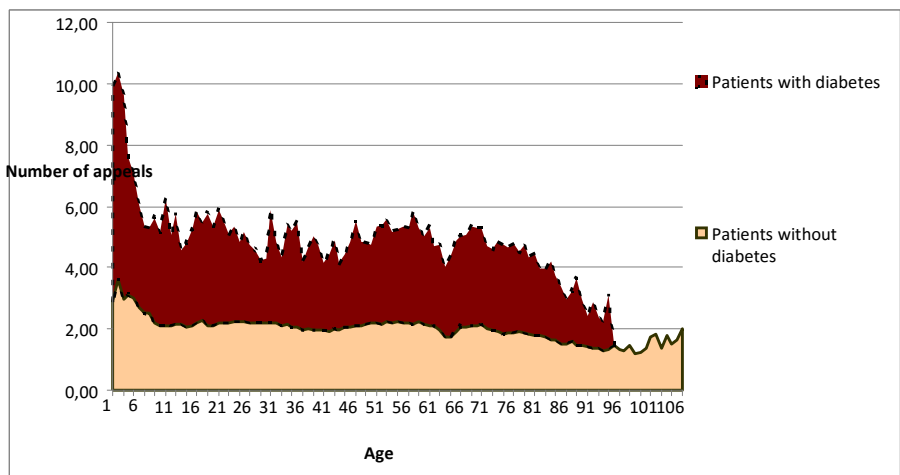


Figure 1. Average number of services provided on an outpatient basis and the patient population diagnosed with diabetes

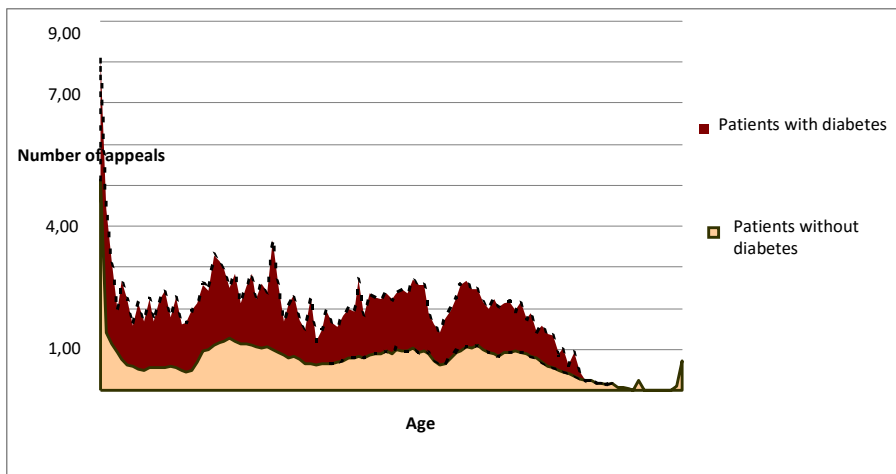


Figure 2. Average number of services provided in a hospital population and patients with a diagnosis of diabetes

Fig. 1 and Fig. 2 shows that the specific volume of care in all age groups is higher in patients suffering from diabetes (darker color), relative to the general population, and this trend continues regardless of the form of receiving services.

The number of applications processed in the array on the ICD-10 category “E” (endocrinological cause) including, in addition to diabetes, other diseases, is only 1.08%. According to our data, the number of diabetics (those that accessed at least once per calendar year in the medical organization) is 3.1% of the population. The share of the regional budget of the mandatory health insurance spent on the troops, including treatment for other reasons, it is 9.0%.

The biggest gain within the patients with diabetes are in cardiovascular diseases (32.49% in diabetics, against 11.47% in those without diabetes), diseases of the musculoskeletal tissue (10.86% vs. 7.75% respectively), diseases of the eye and

adnexa (9.99% vs. 6.92%, respectively).

When analyzing the structure of services rendered in ambulatory form, there is the slight increase in the percentage of therapeutic and diagnostic visits (primary and recurrent) in patients with diabetes (within 1-2%), and the same at home visits (0.5%). Number of dispensary visits for persons with diabetes, is 1.34%, which is 4.24% less than that of the general population, which confirms the low alertness of doctors and low intensity of follow-up of these patients (compared to the “D”-test for other nosology).

Conclusions

A more accurate calculation of the costs of health system resources to assist persons suffering from diabetes, should be used the health managers to reassess the need for diabetes prevention programs, including in terms of their cost-effectiveness.

The difference significant correlations and differences among the various regions (including those with a different picture of the prevalence of risk factors and the incidence of diabetes) [4], makes it possible to talk about the admissibility of an extrapolation of the Russian Federation, one of the data subject for the whole national system.

References

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