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PHARMACOECONOMICS AND PHARMACOEPIDEMIOLOGY AS A METHODOLOGY FOR THE RATIONAL USE OF THE HEALTH CARE BUDGET

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From an economic point of view, the health care system appears as a process of providing medical care, including medicinal provision, medical supervision, inpatient and outpatient care with a mandatory assessment of the results of treatment. A distinctive feature of economic assessments is that they take into account both the costs of a specific medical, diagnostic, surgical or conservative intervention, and the economic results of its implementation. To solve the problem of finding an effective way of spending health care resources partly allows the conduct of pharmacoeconomic studies, the main purpose of which is to study the economic feasibility of prescribing certain drugs and drug therapy regimens, inextricably linked with their effectiveness and safety [1].

In world medical practice, practical recommendations for doctors on the technology of treatment of certain nosological forms, taking into account economic analysis, have become widespread [2]. In addition, at present, both pharmaceutical companies and the governments of some countries, when disseminating information for doctors about the advantages and disadvantages of drugs (drugs), began to include pharmacoeconomic data. Thus, the need for pharmacoeconomic assessment is the basis for creating a rational system of drug supply.

In recent years, the health care system has increased the need for economic assessment of technologies for treating patients [3]. There is a gradual shift in focus from “passive” financing and health care management, in which doctors diagnose a disease and prescribe an appropriate course of treatment to patients, to the doctor’s independent choice of optimal therapy options, taking into account its cost effectiveness. In this regard, over the past 10 years, there has been a tendency of constant growth in the number of pharmacoeconomic studies, which is confirmed by an increase in the number of scientific publications.

Validated pharmacoeconomic studies show the economic benefits of treatment regimens that, along with high clinical efficacy, allow the least amount of resources to be spent. Treatment with an expensive drug that reduces the number of complications and the length of hospital stay is ultimately cheaper, as the total cost is reduced [4].

Pharmacoeconomic research allows solving the following tasks:

- economic analysis of the results of therapy, its impact on health care and society, determination of socio-economic losses and effects caused by the disease, damage to the patient and his family, damage to society;
- assessment and comparison of the cost of treatment, its impact on the quality of life (saved life years);
- assessment of the economic and clinical effectiveness of alternative methods of treatment (comparison of medicinal methods of treatment in different modes to achieve maximum effect);
- optimization of drug therapy and its rational choice;
- cost control.

When developing the goals and objectives of pharmacoeconomic research, it is taken into account whose economic interest will be taken into account when planning and carrying out work: the interests of society as a whole; health care systems at the federal level; health care systems at the territorial level; a separate medical institution, an insurance medical organization; the individual patient or his family.

In this regard, several groups of consumers of pharmacoeconomic information can be distinguished: doctors, pharmacists and pharmacists, patients and their relatives, medical institutions, insurance companies, the government (budget), the ministry of health, and expert scientists [5].

The main areas of application of pharmacoeconomic research data include:

- study of the pharmaceutical market in a specific financial and economic situation with an assessment of their effectiveness and safety;
- assessment of the economic efficiency of new types of treatment;
- selection of medicines with proven efficacy at prices available for budget funding;
- creation of databases of pharmacoeconomic analysis that are used in the formation of the health care budget.

Pharmacoeconomic research should be carried out at different stages of medical care (outpatient, inpatient, rehabilitation stage, etc.) using uniform methodological approaches [6].

The following are considered as the main types of pharmacoeconomic analysis:

- analysis of the "cost of illness";
- analysis by the criterion "cost-effectiveness";
- cost minimization analysis;
- analysis of "costs - utility (utility)";
- cost-benefit (benefit) analysis.

Each of the listed methods necessarily includes several main stages:

- the formulation of the problem under study, the definition of the "point of view" of the researcher (whose interests will be taken into account);
- choice of alternative technology for comparison;

- selection of a criterion (parameter) for evaluating efficiency; Analysis of the effectiveness and safety of the investigated interventions;
- calculating the costs associated with the study interventions;
- calculation and analysis of the actual clinical and economic indicators (the ratio of "cost-effectiveness", "cost-utility" or "cost-benefit").

Cost of Disease Analysis. The essence of this type of analysis is to calculate the costs associated with a particular disease without taking into account the results of the medical care provided. In the context of Russian healthcare, the true cost of treatment, prevention, rehabilitation, the amount of economic damage due to morbidity and mortality is still not known, therefore this type of analysis is of significant methodological interest.

Cost-effectiveness analysis. This is a type of analysis that compares drugs and programs (treatment protocols) for identical performance criteria. Results are measured as the added value between alternative therapies, or as differences in health status acquired after each treatment. In this way, it is possible to establish how much money must be paid to obtain certain health benefits achieved by the assessed treatment.

When comparing the results of treatment, use

“Natural” units of measurement (for example, an increase in life expectancy, a decrease in blood pressure, etc.), not monetary ones.

Cost-effectiveness analysis is a widely used technique because it allows direct comparisons of different therapies. Expression of investments in treatment in monetary units, and its results in “natural”, makes this type of analysis useful both for consumers of medical services (patients) and for their providers (pharmacists and doctors).

The disadvantage is the impossibility of comparing the effectiveness of therapy in cases where the results are expressed in different units of measurement. This analysis is unacceptable in cases where there is a need to use more than one criterion for the effectiveness of treatment outcomes, for example, an increase in life expectancy and at the same time an improvement in its quality, as measured by the indicator of a decrease in the symptom (s) of the disease.

Cost minimization analysis. This type of analysis allows you to determine the real minimum cost of treatment with previously proven equal effectiveness of various drugs. Dignity method of calculating cost minimization is the possibility of comparing alternative medical technologies, but since in real practice medical interventions that are evaluated absolutely the same in terms of both effectiveness and safety are extremely rare, this method of analysis is not widespread.

Cost-utility (utility) analysis. This type of analysis is based on the definition of "usefulness", the most frequently used criterion of which is the saved years of quality life (QALY - quality-adjusted life-years).

This is the only method of pharmacoeconomic analysis that takes into account the patient's preferences in relation to a particular treatment outcome. It, like the cost-effectiveness analysis, makes it possible to take into account the initial data in monetary terms, and the results in “natural” units. Cost-Utility is the only methodology to give

weight to patient preferences. The method measures the ratio of the cost of a medical intervention to its utility.

Cost-benefit analysis. It allows you to calculate the expected profit from the introduction of a treatment method, as well as the resulting savings (from investment, the introduction of a treatment method with a certain drug).

This type of analysis is performed both to compare drugs with each other and to compare alternative treatments to the drug.

Currently, the main users of pharmacoeconomic data are:

- experts, scientists and specialists who need objective economic evidence when comparing drugs of equal efficacy and safety in order to include them in the appropriate lists, lists, Formulary of drugs;

- managers and specialists who will have to determine the optimal budget allocations for the implementation of territorial health programs using data from pharmacoeconomics. Branches of insurance companies, in turn, include drugs in compulsory health insurance programs, taking into account their cost-effectiveness indicators;

- specialists of pharmaceutical and distribution companies, pursuing the goal of conducting an optimal pricing policy for the introduction of drugs in the pharmaceutical market.

Thus, pharmacoeconomic analysis is an effective method for making optimal decisions in the field of drug provision. In connection with the constant expansion of the range of medicines offered by domestic and foreign manufacturers for use, the number of persons interested in using the results of pharmacoeconomic studies is steadily growing.

Pharmacoepidemiology is one of the methods for ensuring the rational and cost-effective use of drugs. The modern definition of pharmacoepidemiology sounds like "the study of the use and effects / side effects of drugs in a large number of people in order to ensure the rational and cost-effective use of drugs among the population, aimed at improving people's health."

Pharmacoepidemiology originally focused on the safety of individual drugs (pharmacovigilance), but today it also investigates their therapeutic effects. This transformation was driven by growing concern that the therapeutic outcomes of drug use within the rigorous framework of randomized clinical trials are not always the same as drug use in everyday practice.

Pharmacoepidemiology can be drug-oriented (that is, aimed at the safety and efficacy of an individual drug or a group of them) or consumption, that is, aimed at improving the quality of pharmacotherapy by conducting educational (training) activities. The synthesis of drug consumption research and pharmacoepidemiology provides insight into the following aspects of drug use and prescription. The structure of drug use covers the volume and characteristics of drug use, trends in drug use and changes in cost over time. The quality indicators of the use of medicines can include the choice of the drug (according to the recommended range); cost of the drug (in accordance with budgetary recommendations); dosage of the drug (taking into account individual and age characteristics); knowledge of drug interactions and adverse

reactions; for patients who are aware and unaware of the cost and benefits of treatment [7, 8]. Results of use: therapeutic (benefits and side effects) and economic results.

Thus, pharmacoepidemiological studies often significantly expand knowledge regarding the efficacy and safety of drugs, since, unlike clinical trials, they assess the effect of drugs in large heterogeneous groups of patients over a long period. The study of drug consumption, among other things, gives an understanding of the effectiveness of their use, that is, it allows you to determine whether the treatment with a particular drug justifies the financial means spent. The results of these studies can be used to determine priorities for rational health budgeting.

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