

OPORTUNITY PROBLEMS OF INFORMATION TECHNOLOGIES IMPLEMENTATION IN PRIMARY MEDICINE

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Abstract: The implementation of information technologies and modern electronic techniques in administrative process from Health System needs significant expenditures. Because of this, a particular attention is paid to efficiency, when solving the problems regarding the opportunity to create the Automatic Working Position. The efficiency estimation of the information technologies usage in medicine is based, on one hand, on general evaluation principles of economic efficiency and efficiency's theory of capital allocations, and, on the other hand, on the evidence of efficiency specific sources, which displays during the information systems running having different destination.

Keywords: High information technologies, Automatic Working Position, Primary Medical Assistance, quantitative efficiency, qualitative efficiency, "man-machine" system.

Automation represents one of the improving ways of administration, which requires considerable expenditures regarding the installation and exploitation of the technical means complex and elaboration of the system project. Because of this, when solving the problems regarding the opportunity to create the Automatic Working Position, a particular attention is paid to the efficiency evaluation which can be obtained only when implementing the system [3;4].

In the process of implementing the high information technologies it is necessary to foresee that the collected information to have a convenient form and content, to simplify the process of planning and decision making, as well as to make the importance of these decisions increase according to the quantitative and exact estimation of the situations. The number of the taken decisions by means of intuition and approximate estimations of the situations has to be reduced to minimum.

It is not enough only to convey Health System administration traditional methods to the computer, but it is necessary to contribute to the improvement of the planning and administrating system of health protection using some more exact information processing algorithms. The latter should provide data obtaining and release expressed briefly and quantitatively, their verity and plenitude. Different modern means are being elaborated at the moment, which permit storage in the computer of doctors' knowledge, processing

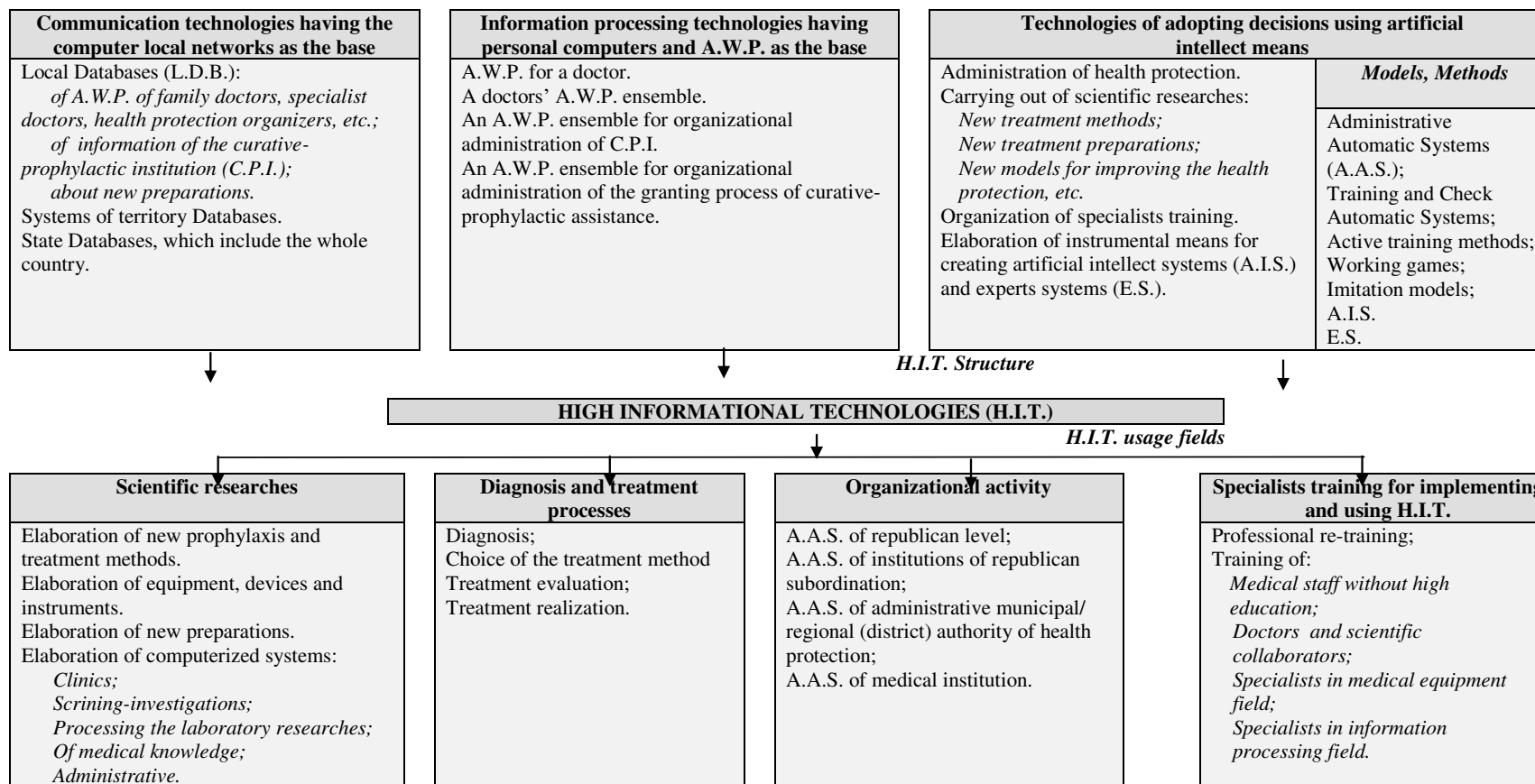


Fig.1. High informational technologies structure and their usage fields in Health System organ

the numerical information, solving diagnosis problems behind a computer (see *fig. 1*) [1;2].

Health System has to be examined resulting from the system principles, from medical assurance logics considering the multidimensional relations of all the component parts. **The main indexes** which has to be obtained when applying high informational technologies in health system are the following: increase of the medical assistance volume of the population for maintaining the level of base means allocations and financial resources; optimal distribution and operative redistribution of the resources; assurance of the rhythm of medical-curative assistance; decrease of the morbidity and getting ill from precocious identification of the illness and decrease of the investigation period; diminution of children's mortality; diminution of temporary working inability; diminution of the invalidity and increase of the working resources; intensification of checking the environment; supplying of the rational ratio of the medical staff applying the scientific organization of the work; modification of the functional attributions, etc.

Efficiency from applying the informational technologies has two facets: **quantitative** and **qualitative**. **Methods of estimating the economic efficiency** are classified into **direct** and **indirect** [5]. **Qualitative efficiency** from applying the informational technologies is determined only indirectly and displays ameliorating the supplying of the population with medicinal and medical assistance in in-patient and out-patient departments. This implies the amelioration of the population health state, which influences the efficiency evaluation of the generation system. The effect is calculated **indirectly** obtained from increasing the number of the in-patients and the capacity to receive the ambulatory institutions, from increasing the number of the requests, served by the urgent medical assistance stations in case of implementing the informational technologies. The following factors are among **the main factors**, which determine the economic effect at all supervision levels of health system: *increase of the level of verity, equipment and opportunity of the medical-statistics information; decrease of the working volume when processing big quantities of information; conditional availability of the staff busy with manual processing and analysis of the information.* The efficiency is calculated **directly** obtained from the decrease of information processing of the price cost when substituting one processing way by another one. The efficiency of the automatic administration increases when being used during the adoption of decisions, economic-mathematical models and methods, which imply optimal and efficient solutions. The usage of the calculus techniques permits a wider usage of these methods and obtaining some variants of solutions, which are optimal according to different criterions. The argumentative social-economic methods of the development of some special directions and of optimization of the "man-machine" system are being improved at the same time with extending the constructive-experimental research scientific works. They are joined by the problems of increasing the economic efficiency of "man-machine" system, which don't require simultaneous important expenses and are made in relatively short period of

time. A relatively exact and complete calculus may be the basis for taking decisions regarding the opportunity of designing and implementing in practice the medical informational system. In this case, determination of the social-economic efficiency of “man-machine” is necessary; it can give us the possibility to use the advantages of a medical informational system at Health System level, as well as at territory medical institution level.

At Health System level: the done calculi, the practice of introducing the most important ergonomic elaboration can show us those situations where the efficiency of using the “man-machine” system can become maximal; the complex appreciation of the “man-machine” system efficiency permits to reveal the possibilities and to carry out the using of the informational systems in different domains of the mentioned System; capital investments in “man-machine” complex are limited, that is why it is necessary for them to be realized with minimal expenses using rationally the available technical-material potential; the future development directions and the perspectives of using rationally this technique in the mentioned System are determined depending on how effective the modern technique is and how well it corresponds to the ergonomic requirements.

At medical institution level: the applying periods of the new informational systems are shorter if the influence of the “man-machine” system improvement on amelioration of the health indicator is more sensible.

There are two approaches to the problem of development of the social-economic effect of the “man-machine” system.

According to *the first* approach [6], the social-economic effect is measured using an indicators system which reflects sufficiently complete the main facets of the techniques and social conditions efficiency of its usage. These indicators are expressed by different measurable units, because they illustrate different properties of the objects in study: the product quality, productivity, work conditions and others. *The second* approach can be called integral. The social-economic effect, in this case, is characterized by means of one single indicator expressed valued. This represents the sum of the incomes increase and of the realized economy after warning the losses. The main difference between these two approaches of determining the social-economic efficiency of the “man-machine” system consists of the fact that in the first case the emphasis is on the social effect, but in the second case – on the economic one.

The respective methodology of calculating the social-economic efficiency of the “man-machine” system is quite general for all the domains of the national economy.

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