

APPLICATION OF MATHEMATICAL MODELING FOR COMPARATIVE ANALYSIS OF DIFFERENT HEALTH CARE SYSTEMS

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Reducing exposure of the risk factors and promotion of the positive factors that determine health, including the socio-economic, socio-biological, ecological and health organization etc. should be the main tasks of the health care system and government in particular. These tasks can be solved by different countries in different ways which is confirmed by a wide variety of existing health care systems.

Health system in Ukraine is undergoing a period of transformation now, and it is not always sustained. One way of changing of the existing health care system is to create the unique, entirely new one that takes into account the social, demographic, economic and other characteristics of the country for which it will be designed. Benchmarking can be the another way, i.e. to use a better experience of functioning of already existing health care systems. However, the disadvantage of benchmarking is how to select countries whose experience will be analyzed, because there are big variety of specific features, that are inherent to the different countries. This disadvantage can be eliminated through the use one of the cluster analysis methods. The essence of cluster analysis in general is multidimensional data classification that allows to split a set of objects into homogeneous groups.

Thus, cluster analysis methods allow the researcher to distribute all countries in separate clusters with similar characteristics and analyze the functioning of systems of health care in the countries that are in the same cluster as the surveyed countries, based on the core data characterizing the demographic

situation in the country, the effectiveness of the functioning of the system health, as well as some economic indicators of the country's development.

Conclusion: classification of countries based on predetermined characteristics can be developed, as well as their helpful conceptual grouping scheme may be examined, through the use of cluster analysis that will allow researchers to solve the problem of choice the countries for comparative analysis. In addition, obtained information can be the foundation for the development of hypotheses about expediency of use of the various mechanisms of improvement of the health care system.