Efficiency Evaluation of Medical Diagnostic Laboratories Using Data Envelopment Analysis in Isfahan, Iran

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Abstract

Background and Objective: Multi-criteria comparison between laboratories is important for laboratory management to improve performance and for policymakers to make strategic decisions. In this study, those aspects of performance are considered that are beyond the traditional evaluation carried out by checklist.

Material and Methods: After the identifying the effective measures, a comprehensive performance evaluation model was presented and the performance of each laboratory was evaluated regarding the use of resources, including personnel, materials, equipment, space and facilities. Data envelopment analysis (DEA), using output -oriented model with constant returns to scale *(CRS)*, was used to evaluate the efficiency of the labs.

Results: the input variables were different kinds of the costs related to staff , material , equipment , space and facilities ; physical standards associated with personnel, equipment, materials , space and facilities; process standards: safety , pre-test process , test process , quality control and after-test process ; systems standards related to purchase and inventory, communications and information.

Conclusion: The application of the proposed procedure for comparing the performance of 18 selected laboratories has shown that only 17% were efficient. The model is also used to determine the causes of inefficiency and to propose the policy for improving performance.

Keywords: Efficiency; Diagnosis, Laboratory; Operations Research