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Designing intelligent dashboard design for efficient management of medical diagnostic laboratory

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Intelligence systems can operate very efficient in the decisions of hospital managers and physicians. Defined intelligent dashboards in intelligent systems provide the comprehensive information to the hospital managers in the context of employee training, service delivery in hospitals and patient satisfaction unit. Based on defined information in these dashboards, doctors can control the latest status of tests, treatment paths, recovery steps and services provided to patients during time and through telemedicine procedure. One of the important parts of hospital is the diagnostic labs, which require the utilization of new tools for intelligent monitoring of activities and identifying challenges as for increasing costs and pressures to eliminate repetitive activities in hospitals.

The purpose of this research is to design an intelligent dashboard for the diagnostic medical laboratory. In this study, the key indexes of this part were first collected by literature review and then by using Delphi technique in two stages, the indexes were finalized and categorized in a panel of laboratory experts in one the teaching hospital of Tehran University of Medical Sciences. The design and creation of dashboards based on the data and determined indexes in the laboratory part were uploaded using the Qlick View software and the performance of this part was presented. According to the obtained information from the intelligent dashboards in the hospital laboratory the hospital's income in 2017 was higher than income in 2015 toward the costs in these years. Also, the most numbers of tests is related to CBC tests and full urine tests in these 3 years. The lab dashboards with a focus on specific indexes, is a comprehensive guide for managers in this part through identifying the number of performed tests, manage the number of tests, improve the quality of services and capacity of tests, allocate the resources and plan to promote this part.

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