

A QUANTITATIVE PERFORMANCE MEASUREMENT FRAMEWORK FOR HEALTH CARE SYSTEMS

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ABSTRACT

Performance measurement has been widely used in the manufacturing industry for years. This research has focused on the adaptation of a performance measurement system used in manufacturing for application in health care systems.

This research proposed a quantitative performance measurement system to apply in the health care industry. The main objective and critical factors to the system were first established to be included in the framework. The main objective and the critical factors were then decomposed in a top-down fashion to identify clearly the requirements of the system and the means to achieving those requirements. After breaking down the main factors to sub-components, these sub-components were then connected based on their qualitative relationships. The components are integrated using incremental calculus and measured by marginal analysis, the effects to the system by a given incremental change of each variable.

The proposed framework was applied to Green Meadows Clinic to measure the effects of changing ten percent of the physician and nursing manpower, the clinic's expenses, patients' turnout to the operating margin of the clinic. The major accomplishments of this work included the incorporation of a system engineering tool to health care system performance measurement and the ability to show the overall effects to the system as a whole by making marginal changes to the inputs, thus helping health care managers to make better decisions.