A Robust Optimization Method for Service Quality Improvement in Health Care Systems under Budget Uncertainty

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Abstract : With the development of business competition, it is important for healthcare providers to improve their service qualities. In order to improve service quality of a clinic, four important dimensions are defined: tangibles, responsiveness, empathy, and reliability. Moreover, there are several service stages in hospitals such as financial screening and examination. One of the most challenging limitations for improving service quality is budget which impressively affects the service quality. In this paper, we present an approach to address budget uncertainty and provide guidelines for service resource allocation. In this paper, a service quality improvement approach is proposed which can be adopted to multistage service processes to improve service quality, while controlling the costs. A multi-objective function based on the importance of each area and dimension is defined to link operational variables to service quality dimensions. The results demonstrate that our approach is not ultra-conservative and it shows the actual condition very well. Moreover, it is shown that different strategies can affect the number of employees in different stages.