DEVELOPING A METHODOLOGY TO IMPLEMENT CONTINUOUS QUALITY IMPROVEMENT IN HEALTH CARE ORGANIZATIONS

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ABSTRACT

The quality of health care delivery has become an increasingly important consideration as health care providers balance concerns for patient care with regulatory requirements, the specter of litigation, increased costs, reduced reimbursements, personnel shortages, and increased demand for services. This paper proposes a conceptual model of the Continuous Quality Improvement process that provides a visual perspective of the process elements and their respective role in the CQI process. The conceptual model is designed to be used by CQI teams as a guide in the adoption and implementation of a CQI process in their organization. Additional managerial decision tools for the organizational implementation of the CQI process are introduced in an effort to guide implementation teams through the process.

INTRODUCTION

The quality of health care delivery has become an increasingly important consideration as health care providers balance concerns for patient care with regulatory requirements, the specter of litigation, increased costs, reduced reimbursements, personnel shortages, and increased demand for services. In this complex operating environment, health care providers strive to deliver patient satisfying, medically sound outcomes to greater numbers of patients with lower costs. Health care quality issues are especially critical because the lives of patients are directly affected by quality failures [25]. At the same time cost issues affect the ability of the health care provider to deliver quality services. Previous research in the marketing and services area has shown that lower costs and sound outcomes can best be accomplished by maintaining high service quality standards [19] [24][4].

Marketers recognize that service quality is grounded in an understanding of patients’ perceptions and evaluations of the service interaction. Conversely, manufacturing has focused on specification measurement and process control with no direct interaction with customers. A recent study by Raju and Lonial [21] indicate that a relationship exists between the environment that facilitates organizational quality practices [2] and marketing orientation [14] [17]. This research demonstrates the necessity for health care organizations to examine opportunities to meld efforts to optimize operational efficiencies with customer service oriented initiatives.
RESEARCH BACKGROUND

An examination of the unique properties of a health care service interaction serves to illustrate the opportunities afforded by the careful integration of efforts to achieve operational efficiency while maintaining a customer service orientation. Each health care service interaction is characterized by a high level of interaction between the patient (customer) and multiple individuals who contribute to the health care outcome. In addition there is the possible use of high technology treatment and diagnostic processes which are to some degree intimidating to the patient. In many cases, patients are not able to adequately measure the efficacy of the outcome and thus base perception of service quality upon the personal interaction with the service providers and the environment in which the service is delivered [7] [15]. Therefore it is necessary to consider the operational and the customer oriented aspects of the service delivery.

Operational Efficiency

Historically, manufacturing firms worked to improve operational efficiency. Efficiency may be defined as how well a process or set of processes operates compared to some standardized output level. These internal measures of performance allowed firms to produce products that met physical and performance expectations and reduced the costs of doing so. Operational efficiency in service firms is more difficult to define and measure. Because customers are involved in the provision of the service they impact operational efficiency. For example, if a health care professional is performing a procedure on a patient the procedure may have a standardized time but if the patient slows the process down (for instance, by asking lots of questions) the process may appear to be less efficient. Organizations now recognize that operational efficiency and the resulting lower costs are not a substitute for perceptions of high quality. As manufacturing firms experienced increased competition in the marketplace, they began to expand their definitions of quality to include customer perceptions of product quality. Firms operating in service environments have an even greater need to focus on both internal process knowledge and external customer involvement in those processes to make improvements in processes that lead to improved efficiency.

Customer Service Orientation

The initial market orientation construct was defined from a managerial or employee perspective [16] [14]. The importance of understanding and responding to customer needs (customer service) springs from early studies regarding the market concept which identified the positive effect between market orientation and business performance [17] [23] [27] [28]. Reeves, Matnet and Crane [22] argued that it was crucial that healthcare service providers consider both professional standards and customer expectations.

The measurement of service quality is complex because it is dependant on customers’ perceptions and evaluations of the service [30] [9]. Gronroos [9] defines service quality in terms of the point in the service process where interaction between customers and service providers occurs. More current studies have emphasized the importance of incorporating customer perceptions as they are the recipients of the service interaction. A recent study by Anwar [1]
indicates that the requirement for sustainable service quality in the healthcare industry illustrates the necessity for a market orientation.

In the minds of many, six sigma and other quality methodologies are primarily focused on reducing waste and costs associated with poor quality, and improving efficiency and effectiveness of the manufacturing process [10]. In fact, when incorporated within the service environment, six sigma and other quality programs such as Continuous Quality Improvement have also shown to produce positive results. Customer perceptions of quality (functional quality), measurable service delivery quality (technical quality) and cost/waste reduction have all been positively impacted [3]. In a health care service interaction, the patient in essence judges the technical competence of the health care provider by how he/she is treated during the service interaction [11].

MODEL DEVELOPMENT

For the purpose of this investigation, quality is seen as a journey and not a destination. The Continuous Quality Improvement (CQI) process incorporates a continuous loop which identifies internal and external process variation, determines the cause of the variations, and designs and implements strategies to advance organizational quality performance. In order to successfully design and implement a CQI initiative, there must be a clear understanding of all elements that must be included.

The introduction of a conceptual model of the CQI process is proposed (Figure 1). This model provides a visual perspective of the process elements and their respective role in the CQI process. The conceptual model is designed to be used by CQI teams as a guide in the adoption and implementation of a CQI process in their organization. Additional managerial decision tools for the organizational implementation of the CQI process are introduced in an effort to guide implementation teams through the process.

As the CQI Process Model illustrates, the continuous quality improvement cycle is dependent on several factors in order to function correctly. The health care service provider must be able to correctly identify the problem in need of a solution or the entire process of improvement may focus on inconsequential problem areas that will fail to address the most important issues. In service operations, several factors are important for proper problem recognition. These are the organization’s ability to understand and measure both functional and technical service performance, the service processes, and the customer needs and expectation which drive those processes.

Customer/Patient Needs and Expectations

Before an external problem can be measured it is important that service organizations first understand the needs and expectations of their customers. This step is complicated by the fact that in services, customers tend to fall into three categories: (1) customers who frequent the service on a continuous basis, (2) customers who do not use the service continuously but do return over and over and (3) customers who use the service infrequently, perhaps only once.
Each of these three customer types creates a need for different ways to measure needs and expectations which must be met by the corresponding internal processes.

The most obvious expectation of patients is that they will receive a positive outcome from the medical procedure or interaction. But, what is often overlooked is the patient’s emotion-based evaluation of the total experience [6]. The top complaints registered by patients of the National Health Care Service in England and Wales include safety, poor communication/lack of information, ineffective clinical practices and administrative procedures, lack of coordination between inpatient and outpatient services, being treated with a lack of respect, poor attitudes of the staff, and poor and often unhygienic environment [8]. A review of these complaints reveals that they are based on patient evaluation of functional quality rather than evaluation of the technical service (actual medical procedure).

**Functional Service Measurement**

Measuring patients’ satisfaction with the medical-based service interaction includes technical and functional service interactions. In many cases, the functional interaction serves to set the stage for the technical service delivery and as such provides the lens through which patients view
the entire interaction. Dependence on receiving unsolicited complaints is not conducive to developing a proactive stance on process improvement upon which CQI is based. The use of exit interviews and surveys to gather information from patients for everything from the appointment process to their meals to the exit process enables healthcare providers to identify issues before they become problems [20]. Analysis of complaints, exit interviews, and surveys must lead to visible changes that meet the expectation of patients.

Understanding Medical Processes

Because of the technical nature of medical procedures their evaluation most appropriately belongs within the scope of medical practitioners. It is customary for performance boards to examine incidences that result in death or other unsatisfactory outcomes. In addition accredited health care providers are subject to periodic review by The Joint Commission [12] to determine their adherence to accepted medical practices and patient-oriented processes and procedures.

Technical Service Processes

While the actual technical procedure may not be within the purview of the patient, the steps in the process, including communication of what patients should expect, do have an impact on patient perceptions of the quality of the process. Patients are very cognizant of clinical practices, safety, and cleanliness. They use these indicators to judge the quality of the actual medical procedure and outcome. Patients make use of the complaint process to let it be known that they are not willing to accept the status quo and expect changes in the health organization’s procedures and practices [6].

Once a need for quality improvement is identified, the problem must be matched with an appropriate quality tool in order to effect the change. At this stage of the process, a company’s understandings of their internal service processes and their prior experiences with quality programs will help to determine their choices. These variables when considered together can help an organization to assess its readiness for a particular Continuous Quality Improvement intervention and also to estimate the time and effort required for successful implementation.

Continuous quality improvement efforts may take many forms. Of particular interest is the Six Sigma DMAIC process. The DMAIC process was developed at General Electric in the 1990s and has been applied in many types of businesses. Continuous quality improvement in health care will be examined using the DMAIC framework.

Problem Identification

Understanding the process and identifying problems is the first step in DMAIC. Both continuous quality improvement and six sigma methodologies mandate the involvement of employees, management and customers in the processes of understanding the service processes and identifying particular problem areas that should be improved. In health-care services the completion of this step should involve both employees and managers studying the processes in order to clearly understand them and obtaining and studying customer (may include both patient and family members) views of the processes. A number of quality tools might be useful in
promoting a greater understanding of health care processes. For instance brainstorming, tree diagrams, process flowcharts, process maps, and cause and effect diagram (fishbone) diagrams might all be appropriate means of increasing internal understanding of how the processes really work [10] [18]. Patient and family member input might best be gathered by using methods such as on-going customer surveys, regularly scheduled focus groups or intervention surveys or interviews after service failures. Of special concern are service failures in health care because these have the potential to be life-threatening.

**Select Investigative Method**

The second DMAIC step involves accurate measurement of process performance. It is generally accepted that service operations may have processes that are not as closely controlled or understood as those in manufacturing. There is no reason to suppose that health care services do not have the same problems. Variability in the execution of health care processes might occur because of a number of people related factors. For instance, the nursing staff in a hospital setting changes at regular intervals and this alone might create variability in health care provision. It is also possible that patient behaviors either due to medical reactions or due to patient behaviors might create variability in health care processes. The use of customer surveys and check sheets to monitor process performance might be particularly useful in monitoring variability [18].

Health care providers may be expected to also consider the expectations of those stakeholders whose views have an impact on the health care service provider. For example, the Carolinas Medical Center developed the MED-1 project after the 9-11 attacks as part of a project funded by Homeland Security [5]. This project was designed to handle mass casualties in field settings due to, for instance, terrorist attacks, natural disasters or special event coverage [5]. The mobile hospital is moved by tractor-trailer and can be setup on site to provide a secure sterile hospital setting capable of handling surgical and emergency procedures. It was, for example, deployed to help in the aftermath of Hurricane Katrina to Mississippi for a period of seven weeks [5].

**Apply Tool to Determine Problem Cause**

In the third step, data is gathered from the process and then analyzed. Once data is gathered from the health care process a number of data analysis methods might be used. For instance, process-flow analysis, value and non-value-added analysis, Pareto charts, histogram, runs charts or scatter plots might be especially useful in a health care setting [10] [18]. It might also be possible to conduct more complex analysis such as tests for statistical significance, correlation analysis or regression analysis [10] [18].

**Apply Tool to Remedy Problem**

Implementation of the chosen changes is step four in the DMAIC process. Many tools are available to assist in the implementation of the process changes. For instance, project management methods, failure mode and effects analysis, stakeholder analysis, force field diagrams, process documentation and balanced scorecards might be useful [10] [18].
Implement CQI Strategy

In step five, the changes are complete and the process must be controlled. Changes to the health care process must be measured and evaluated by the ongoing gathering of new data from the process to chart the impact of the changes.

DIRECTIONS FOR FURTHER RESEARCH

The challenge for the researchers is to develop process maps for internal and external processes that will be useful for health care CQI project teams as they seek to develop performance indicators and the associated appropriate measures to serve as benchmarks for problem identification and to determine the effect of implementing new CQI strategies. The only way to determine if quality is being continuously improved is to be able to use the current quality standards as a point of reference.

CONCLUSIONS

The results of exceptional levels of health care service delivery may include short term increases in productivity and profits due to reduced costs [29] [31] [13]. Over the long term, exceptional levels of health care service delivery can be used to create a comparative advantage in the marketplace. The creation of a competitive advantage is an increasingly important factor given the increasing costs of health care and the increased governmental oversight and decreased reimbursement [13] [26]. Considered from a customer perspective, good service quality should lead to long-term customer relationships (measured by loyalty and repeat patronage), to customers’ willingness to recommend the service to others and to customer’s perceptions that the health care organization has a good reputation [9, p. 260].

It is clear that when evaluating quality in the health care setting, attention must be paid to the effect that a marketing orientation, organizational performance, and patients’ perceptions and evaluations of the service interaction have on service quality. The synergistic relationships and their impact on the delivery of continuous quality improvements and their effect on the operational and financial health of the health care organization have not been adequately explored and represent an opportunity to further the science of Continuous Quality Improvement. This project focuses on the development of a methodology that utilizes the synergies between marketing orientation, organizational performance, and patients’ perceptions and evaluations to facilitate the integration of continuous quality improvement activities and processes into the culture of the health care organization.

REFERENCES


