Chapter 2
Determinants of Service Quality in Healthcare

[The present chapter outlines the evolution of the main concepts of quality and the later developments in the healthcare service quality. The concepts of Service Quality (as against product quality), Total Quality Management (TQM) and Total Service Quality (TSQ) are dwelt upon. The last one is of recent origin. Appropriate definitions are provided. Measurement techniques for service quality are explained. The material provides a good background for the work in the thesis, after identifying the determinants of healthcare service quality.]

2.1.1 Introduction

Service quality is increasingly considered crucial for patient satisfaction, which is essential on humanitarian grounds as well as a marketing strategy. The relevant definitions are enumerated below, tracing the path of concept development. A contrast between product quality and service quality is built into the process.

2.1.2 What is Quality?

Quality may be defined in terms of “meeting the specifications” or “fitness for the intended purpose” for a manufactured product. This can be monitored using a wide variety of control charts or the integrated Total Quality Management (TQM) principles. Added to this, is the reliability analysis methods which accommodate a time dimension as well. However, quality is a much more complex term, in general, than it appears to be. According to Deming (Father of modern quality assurance methods) only the customers’ perceptual definition of quality matters. It is highly subjective and must have commercial value attached to it.

Ways of Looking at Quality Definitions

1) Customer – Based

"Quality consists of the capacity to satisfy wants." (Edwards, 1968)
"Quality is fitness for use." (Juran, 1988), which indicates “meeting or exceeding
customer expectations”.

2) **Manufacturing - Based**

"Quality is the degree to which a specific product conforms to a design or specification" (Gilmore, 1974)

"Quality [means] conformance to requirements." (Crosby: *Quality Is Free*)

3) **Product - Based**

"Quality refers to the amount of the un-priced attributes contained in each unit of the priced attribute." (Leifler, 1982)

4) **Value - Based**

"Quality is the degree of excellence at an acceptable price and the control of variability at an acceptable cost." (Broh, 1982)

2.1.3 **Transcendent Attributes**

"Quality is neither mind nor matter, but a third entity independent of the two, even though Quality cannot be defined, you know what it is" (Pirsig, 1974).

As per International Organization for Standardization, “quality” can be defined as “a totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs”.

The American Society of Quality defines quality as “a subjective term for which each person has his or her own definition”.

The case of services is quite a bit more involved. One may look upon the ‘product and services’ scenario, as when sale of a product is followed by the important phase of ‘after sales service’. Also, there is the case of only service as in, for example, medical care. The meaning of quality in the context of service has evolved over the span of time, assuming generality and enveloping subtler aspects. The need for multiple definitions of service quality has been well recognized in literature. The following characteristics of quality may be noted:

1) Quality is *objective* and *subjective* at the same time, it can only be generalized to a limited degree,
2) Among its factors there are specifications, which can be measured; and others that can only be apprised,
3) Quality can mean a technical-efficiency level and any departure therefrom,
4) It has perceivable user effects and effects that the purchaser does not consciously perceive and
5) Quality is in a \textit{continuum} on a real line of numbers.

Feigenbaum (1991, p. 7.) defines the quality of a product or a service as “the total composite product and service characteristics of \textit{marketing, engineering, manufacture, and maintenance} through which the product and service in use will meet the expectations of the customer”.

Today “quality is construed in a more comprehensive manner; it refers to the entire organization (company, instrument), its environment, infrastructure and the society, organization, social culture as well as the category of life-quality gain and true quality content” (Parányi, 2006, p. 8).

\textbf{Some Examples for Quality Variables}

\textbf{Table 2.1: Sector-wise Examples of Quality Variables by Product Area}

<table>
<thead>
<tr>
<th>Area</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airlines</td>
<td>On-time, comfortable, low-cost service</td>
</tr>
<tr>
<td>\textbf{Healthcare}</td>
<td>\textit{Correct diagnosis, minimum wait time, lower cost, security}</td>
</tr>
<tr>
<td>Food services</td>
<td>Good product, fast delivery, good environment</td>
</tr>
<tr>
<td>Postal services</td>
<td>Fast delivery, error-free delivery, cost containment</td>
</tr>
<tr>
<td>Educational Institution</td>
<td>Proper preparation for future, on-time knowledge delivery</td>
</tr>
<tr>
<td>Consumer products</td>
<td>Properly made, defect-free, cost effective</td>
</tr>
<tr>
<td>Insurance</td>
<td>Payoff on time, reasonable cost</td>
</tr>
<tr>
<td>Military</td>
<td>Rapid deployment, decreased wages, no graft</td>
</tr>
<tr>
<td>Automotive</td>
<td>Defect-free</td>
</tr>
<tr>
<td>Communications</td>
<td>Clear, fast, inexpensive service</td>
</tr>
</tbody>
</table>

\textit{Source: Author}

\textbf{Total Service Quality in Healthcare: With Special Reference to Yeshasvini Project in Karnataka}
2.2.1 Rise of Quality Consciousness in Hospitals/Patients

In recent times, patients’ assessment of quality for healthcare has begun to play a critical role, more so, in the case of developed countries and the consumers are in the driver’s seat. Their satisfaction or dissatisfaction with services received has become an area of wide researches. There is increasing expectations for transparency, value, and customer service. Consumers, especially the younger generations, expect healthcare to work the same way as the other digital markets, with more user-friendly interfaces, clearly defined rates, and wide choice of product options. The consumers opt for more options, higher engagement via channels of their choice and superior healthcare experiences that suite to their personal requirements. Consumers today are more knowledgeable and not easily convinced, have many choices for managing their health, and expect their individual requirements to be fulfilled. Many in the healthcare industry have already recognized the financial benefits of focusing on an excellent patient experience. The examined literature indicates that there is a positive relation between service quality and patient satisfaction, followed by hospital care and their willingness to return to the same hospital for future treatments, when needed. Recent approaches in this context based on cases are discussed next.

2.2.2 Total Quality: An Integrated Perspective

It is being increasingly recognized that a high quality of product and service and their associated customer satisfaction are the key to survival and prosperity of any enterprise. A worldwide competition, generally, demands the following four types of abilities:

a) To elucidate what the customer wants over time,

b) To consistently provide products and services of assured quality,

c) To adapt quickly to technological, political and social changes and

d) To foresee changing customer needs in advance.

Thus, the problem is not just to improve quality; rather sustaining it is the critical requirement. What is needed now is a path to Total Quality Management (TQM), which

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results in managing for \textit{effectiveness} and \textit{competitiveness}. This, in turn, ensures continued customer satisfaction. Integrating the quality concepts in the service sector, as now done extensively in the manufacturing sector, will be interesting and useful. A focus of the present work is in this direction to convert the invisible need into \textit{visible experiential quality}.

2.2.3 Measuring Service Quality: A Complex Issue

Quality cannot be measured on a rather simplistic good/ bad \textit{binary scale}. Several factors, with their complex interactions, get into the scenario along with the cost consideration. There are \textit{stated} and \textit{realized} quality levels. A bunch of selfish interests are at work, when one examines the quality and outreach of health service. Thus, a well-balanced and carefully calibrated measuring mechanism has to be evolved. The views from different angles are to be fused together and mapped onto the \textit{quality canvas} to produce a summarized picture. In a sense, this can be likened to using a fine-meshed sieve for separating the unimportant and less important components from a multi-factor mix.

Service quality has both qualitative and quantitative aspects as mentioned earlier. For example, let us consider the service of an electricity supply company. Power supply interruptions, voltage variation and billing errors are \textit{quantitative} while promptness in attending to complaints, courtesy of contact staff and facilities for bill payment are essentially \textit{qualitative}. While developing a service quality indicator one has to have:

1) A mechanism to quantify qualitative aspects, and
2) A system of weights to combine the components.

In this effort, \textit{tangibles} and the \textit{intangibles} are to be dealt with suitably. This makes measuring of service quality a challenge, as well as interesting, giving scope for innovative methods. Endeavor to blend the threads of quality dimensions to envelop the varied aspects in the health sector.
2.2.4 Defining Service Quality in Healthcare

Wealth as such has no meaning in the absence of healthcare. Giving a precise and comprehensive definition of quality in healthcare is rather difficult. The Institute of Medicine (IOM) proposed in the year 1990 a durable and widely quoted definition as follows: “Quality consists of the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”

Some of the authors have underlined Deming’s suggestion for recognizing the importance of market. These authors refer to care that meets the expectations of patients and other customers of healthcare services. Thus, the IOM definition of quality can be delineated: “Quality consists of the degree to which health services for individuals and populations increase the likelihood of desired health outcomes (quality principles), are consistent with current professional knowledge (practitioner skill), meet the expectations of healthcare users (the marketplace)”.

Quality assurance and enhancement are key activities in healthcare services. This is driven by higher patient satisfaction and better business processes. Commitment to quality and its enhancement pervades the entire process. Its strength is evidenced by an improved service profile.

IOM has identified four important elements of Healthcare Quality: The process of care, clinical outcomes, patient safety and satisfaction to offer a composite measure of quality.

Sower et al (2001) developed an important technique based on the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) dimensions. This scale was called the Key Quality Characteristics Assessment for Hospitals (KQCAH) which retained the organization process as well as the service component factors. This was built on a varied response base of hospital administrators, employees, patients and their family members. Service quality in hospitals, as a construct has several dimensions. These must capture the perspectives of providers as well as patients. Health Service
quality often is difficult to define in terms of what are to be measured. A survey of literature testifies to this fact and points to the absence of a universal definition of total service quality. It combined both qualitative and quantitative methodologies to develop eight dimensions of service quality and, in turn, use these dimensions to measure patient satisfaction: Respect & Caring, Effectiveness & Continuity, Appropriateness, Information, Efficiency, Meals, First Impression and Staff Diversity. It considers the patients’ perspective to a large extent resulting in improved hospital performance. Studies indicate that KQCAH, if employed periodically, has high levels of content, reliability and validity, providing an edge to the hospitals in a competitive environment.

Parasuraman (1988) and others have identified five dimensions of service quality (tested empirically): Tangibles, reliability, responsiveness, assurance and empathy, which have been incorporated into their SERVQUAL instrument. Among the criticisms of this scale are issues regarding predictive and convergent validity and about unstable dimensionality.

Several attempts have been made to tackle the problem of defining service quality in the healthcare context, and to develop a measurement instrument. Carman (1990), Ford et al (1997) and others opine that service specific dimensions need to be added to the five SERVQUAL dimensions, to accommodate patient’s perspectives.

Cronin and Taylor (1992) developed a "performance-based" service quality measurement scale called SERVPERF scale. They proposed that perceptions of performance are the only criteria to measure & define service quality and brought out this model.

Coddington and Moore (1987) suggest that the key factors from the consumers’ perspective here are a) warmth, caring & concern, b) medical staff, c) technology-equipment, d) specialization & scope of services and e) outcome.

Illustration

Ten patients/attendants were asked to rank order the above characteristics from one to nine, (one being most important, nine being least important) from a patients’
viewpoint. The respondents were well educated and knew the implications of the characteristics for the patient. In order to remove the effect of listing order the characteristics were presented as a permutation sequence of (a) to (i). The rankings obtained are shown in a table-form, along with a simple rank-order analysis.

The respondents were given the option of equal ranking, if they so desired. The final ranking score is taken as

\[ S = 90 - \sum R_i \]

where \( R_i \) is the rank assigned by respondent \( i \).

Here 90 is the maximum possible total of the ranks (= 10 * 9), and there is an inverse relation between \( R_i \) and \( S \).

Table 2.2: Rank Order Analysis of Nine Characteristics

<table>
<thead>
<tr>
<th>Characteristic/Respondent</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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<tr>
<td>1</td>
<td>6</td>
<td>1</td>
<td>7</td>
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<td>4.5</td>
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<td>1</td>
<td>9</td>
<td>8</td>
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<tr>
<td>( \sum R_i )</td>
<td>55</td>
<td>18</td>
<td>58</td>
<td>47</td>
<td>38</td>
<td>77</td>
<td>31</td>
<td>64</td>
<td>65</td>
</tr>
<tr>
<td>Score ( S = 90 - \sum R_i )</td>
<td>35</td>
<td>43</td>
<td>33</td>
<td>44</td>
<td>53</td>
<td>13</td>
<td>59</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Final rank order</td>
<td>V</td>
<td>IV</td>
<td>VI</td>
<td>III</td>
<td>II</td>
<td>IX</td>
<td>I</td>
<td>VII</td>
<td>VIII</td>
</tr>
</tbody>
</table>

Source: Author

Thus, a rank ordering of the nine quality characteristics under focus in healthcare service from patient's viewpoint and as revealed by the data on hand is

\[ G E D B A C H I F \]

Thus, effectiveness occupies the first place and continuity the last, the others being in between as indicated. The respondents had some difficulty in discriminating between availability and timeliness feeling that the latter included the former.

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We recognize the possibility of an altered ranking with a different larger data set, but the general trend is likely to remain unchanged.

Shortell (1976) and Taylor et al (1981) observe that organizational research within healthcare service delivery systems lacks reliable and valid measures of performance. These facts point to the scope for meaningful new work in this area and the need to develop good measures of quality and performance.

2.3.1 Measurements for Quality in Healthcare

Patients who receive healthcare service naturally judge the quality (Choi et al 2004). Grönroos (1984) segregated the perception of customers of any service into two dimensions:

1) Technical quality: Technical outcome of the process - what the consumer receives; and
2) Functional quality: How the consumer receives the above technical outcome that is "expressive performance of a service".

Service quality measurement was not considered very important a few decades ago. But with an evolving scenario and increasing awareness among the patients, it has now gained popularity (after the 1990’s).

2.3.2 TQM Approach

Deming, Juran and Crosby are three of the most influential persons who advocated TQM. Deming’s fourteen principles may be crystallized as redesigning the processes and systems to Plan, Do, Check and Act (PDCA). Juran focused on quality planning, control and hence improvement. He argued that TQM begins at the top of an organization and works its way down and developed ten steps which sum up to quality planning, control and continuous improvement. Crosby’s ideology is that of conformance to quality standards (zero-tolerance). He argued that the system for ensuring quality is a prevention mode, while the associated measurement is the price paid for nonconformance.

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2.3.3 Defining TQM in Healthcare

In the context of healthcare, TQM is characterized generally by three definitions:

1) A “Comprehensive strategy of organizational and attitude change for enabling personnel to learn and use quality methods, to reduce costs and meet the requirements of patients and other customers” [Ovretveit, 2000]

2) “The maximization of patient’s satisfaction considering all profits and losses to be faced in a healthcare procedure” [Donabedian, 1989]

3) US Conventions (William & Johnson, 2013) emphasize that it is a management method with the following distinct functions:
   a) Enables clinicians and administrators to analyze and continuously improve the process.
   b) Recognizes that customer preferences are the primary determinants of quality (The term “customer” includes patients and providers.)
   c) Allows a multidisciplinary approach extending beyond conventional departmental and professional lines.
   d) Rational data-based cooperative approach to process analysis is made possible.

The process of TQM practice in healthcare suggests methods to formulate alternative approaches to make the implementation more effective, within the framework of the local scenario. It is simultaneously two things: a management philosophy and a management method.

The Genesis

The roots of quality assurance in healthcare date at least as far back as Florence Nightingale’s work during Crimean War (1854-56), wherein nutrient, sanitation and infection control were emphasized. TQM can be an important part of hospital’s strategy to ensure customer satisfaction. The patient must be put at the heart of healthcare and care must be wrapped around and NOT conversely. Acceptable quality services include direct medical services (e.g. diagnosis, medicine/surgery and treatment) and indirect operations (e.g. administration, security and attitude of nursing and timeliness of

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facilities). The six-sigma quality concept of measuring how close one comes to delivering on what is planned is a useful tool.

The elements of TQM in healthcare include customer focus, empowerment/teamwork, strategic planning, leadership, continuous improvement/learning, process management (along with its tools) and quality assurance/control.

TQM may call for a paradigm shift in healthcare management with total participatory involvement, collective responsibility and continuous improvement. The customers in TQM include patients and their families, medical personnel, physicians concerned, Government, accrediting institutions, employers and nurses.

2.3.4 Importance of TQM in Healthcare

TQM in health sector encompasses several strategies in order to improve quality and reduce costs (Asubonteng et al, 1996), which include:
1) Identifying and meeting customer needs,
2) Reducing costs of non-compliance,
3) Achieving zero-defects,
4) Controlling variability of results,
5) Statistically identifying and monitoring processes and
6) Continuous effort for better quality.

If TQM is carefully built into healthcare, one may expect cost reduction, avoiding serious or fatal errors ending with loss of life or litigation. In fact, Hamilton (1982) assessed that 90% of drug prescriptions are not needed; risking serious side-effects and unnecessary surgery causes avoidable deaths along with wastage of money.

Progresses in management practices for continuous redesigning of the systems for better quality have been successfully adapted in the health sector. TQM groups use mutually reinforcing techniques in a sequence of planning, implementing, evaluating, and revising to achieve better quality in clinical and administrative processes. This involves process mapping, statistical quality control and planned team activities.

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2.3.5 Deming’s Principles for Healthcare Systems

The Deming philosophy for quality development in healthcare sector is displayed in the next figure to provide a clearer one-shot view.

Source: Author

Figure 2.1: Deming's Quality Philosophy Adapted to a Healthcare Provider Facility

These principles hinge on the following:

a) Zero-defects achieved through proper quality control on suppliers,
b) Continuous improvement in the system,

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c) Training and educational needs of involved staff,
d) Proper maintenance of records,
e) Elimination of numerically specified goals, slogans and work standards,
f) Removal of barriers that constrain the staff and
g) Support by top management for TQM implementation.

2.3.6 The Stakeholders

The patient (customer) is at the center of the service quality circle. His family, nurses, doctors and hospital administration are well inside the circle. One may note the clear scope for a conflict of interests here, part of which may be latent. Being concerned with quality healthcare for the citizens, the State is a stakeholder. The Government is accountable for relevant policy formulation and its effective implementation. The patient is often reduced to the status of a mute spectator due to lack of technical knowledge and transparency. These premises can be extended to cover pharmaceutical companies, distributors and drug stores (including e-portals) in a wider scenario. However, it is intended exclude these from our purview, since this will make quality evaluation more complex and in part quantitative rather than being qualitative. The discussion confines our discussion to the patient, family, nurses, physicians, hospital administration and State combine in the enumeration in subsequent chapters.

Source: Author
Figure 2.2: Internal Service Chain and Patient Link in a Hospital

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In the figure given above, the linkages between a hospital setup (provider) and the patient -as receiver of service is shown.

TSQ refers to the aggregate (net resultant) of the quality of services provided to the patient by the several players (providers) involved here as a team. The thesis emphasizes this aspect to evaluate the resultant picture. The interest is on the immediate hospital environment and the factors constituting the same, to deliver health services jointly. The thesis works on ways and means of combining the constituent component effects together with methods for determining the mixing proportions. The related issues in the Indian scenario are debated, following appropriate identification.

2.4 In Brief

With an expanding horizon and increasing expectations by the patients, it is only natural that the definitions get more inclusive and complex. The present chapter has briefly traced this locus with main emphasis on the health sector. It has outlined the integrated approaches of TQM and TSQ in healthcare together with appropriate definitions. The stakeholders are identified. The material provides a backdrop for the subsequent chapters.