A Proposed Model for Measuring Service Quality in the Public Health Care Sector
Liz Gill and Lesley White. Macquarie Graduate School of Management

Abstract

The measurement of service quality in the Australian public health sector has received little attention, despite a significant body of evidence highlighting its importance. This paper reviews studies of services quality in health care, identifying additional key domains. Of 36 studies reviewed, only three have gone well beyond the SERVQUAL framework and five have adopted an entirely different approach. A model is proposed to specifically include those domains. The independent variables which are postulated to determine perceived service quality in the public health care sector are Reliability, Responsiveness, Assurance, Joint Decision Making, Caring, Risk, Continuity, Collaboration, Outcome, Empathy and Tangibles.

Introduction

The costs of health care are rising in the western world (Ovretveit, 1992) with demand for service now well exceeding supply. Patient and professional quality expectations have increased along with government pressure to contain service costs (Sewell, 1997). Ovretveit has characterized quality health care as “fully meeting the needs of those who need the service the most at the lowest cost to the organisation, within the limits and directives set by higher authorities and purchasers”. In the Australian public health care sector, the measurement of quality is a topic of great significance, with evidence based medicine providing a means for cost control. Much work has been and is being undertaken to measure the technical components of health care and to improve health outcomes. In this sector there are now three identifiable trends: the emergence of the patient as consumer, the introduction of innovative and complex technologies and a different approach to health care management. Yet there is no unified process for assessing and measuring the various components of health service quality and to date little work has been undertaken on the consumer side of the quality equation.

Technical Quality and Health Care

In most countries offering a westernized system of medicine, multiple organisations have been established to focus specifically on health quality. In Australia a number of such organisations exist at the national and the state levels. At the national level the two most significant organisations are the Australian Commission on Safety and Quality in Health Care (prior to 2006 it was the Australian Council for Safety and Quality in Health Care) and the Australian Council on Healthcare Standards (ACHS). Both have a focus on improving the technical quality and safety of health care, where technical quality is the accuracy of the diagnosis, procedures and therapeutic interventions. This focus is replicated at the state level. Health care quality has traditionally been the responsibility of the service provider. According to Donabedian (1980), quality is purely an attribute that the technical and interpersonal aspects of medical care manifest to varying degrees. Using a framework of structure, process and outcomes, Donabedian developed seven
attributes for “good care”: efficacy, effectiveness, efficiency, optimality, acceptability, legitimacy and equity. Zifko-Baliga (1997) expanded on this model linking 15 perceived quality dimensions. Anderson and Zwelling (1996) argued that Donabedian’s first four attributes constitute technical quality and that excellence in technical quality is the attainment of the best possible clinical outcome. Jun, Peterson and Zsidin (1998) then proposed that the health care service dimensions that align with the technical aspects of care are competence and patient outcomes, and that these are the dimensions used by health service providers to determine quality. Carman (2000) concurs that medical professionals prefer to focus only on outcomes.

**Functional Quality and Health Care**

Understanding quality from the perspective of the consumer, particularly functional quality, is emerging as a critical issue in health services delivery with recent research showing that physicians have the worst understanding of consumer expectations (O’Connor, Trinh and Shewchuk, 2000). Functional quality refers to the affective attributes of the health service experience, namely the way the health care service is delivered to the consumer. Further the active role of consumers in determining the quality of the service they receive is confirmed by a number of researchers (Lengnick-Hall, 1996; Lengnick-Hall, Claycomb and Inks, 2000). Studies show that perceived service quality is directly linked to compliance with medical advice and treatment regimes (O’Connor, Shewchuk and Carney, 1994) which relate to achieving best health outcomes.

Consumers are becoming increasingly knowledgeable, discriminating and demanding of health care services with increasing expectations, and their access to the internet opening up the realm of consumer medical knowledge. Whilst health care in Australia is largely free, the currently unmeasured opportunity cost to the health system of dissatisfied consumers shifting from one provider to another and from one public hospital to another should not be underestimated. Each time a consumer shifts the medical history is usually lost, diagnostic processes and therapeutic interventions begin again, and adverse impacts on the consumer’s health outcome can be the result. In addition, dissatisfied consumers are increasingly lodging formal complaints and taking legal action against providers and health care organisations. To reduce these impacts, the health care sector needs to incorporate a high level of both technical and functional quality.

**Service Quality and Satisfaction**

A key question has been whether service quality and consumer satisfaction are the same or different constructs. One model proposes that the consumer’s perception of service quality results from the cumulative experience of satisfaction/dissatisfaction with each service encounter (Patterson and Johnson, 1993). However Anderson and Sullivan (1993), Oliver (1993) and Spreng and Mackoy (1996) all present evidence that service quality is an antecedent to consumer satisfaction. Gotlieb, Grewal and Brown, (1994) in a study on patient discharge, hospital service quality and satisfaction found that customer satisfaction mediates the effect of service quality on behavioural intentions. Taylor
(1994) argued that service quality and consumer satisfaction should be viewed as separate constructs and Dabholkar (1995) found that the causal link between consumer satisfaction and service quality varies with the service situation, and the direction of the causal link influences future customer behaviour. Further Dabholkar, Shepherd and Thorpe (2005) conclude that service quality and satisfaction must be measured separately and that service delivery is best studied through evaluating the consumer’s perception of quality.

Measuring Health Service Quality

There has been considerable attention surrounding the use of SERVQUAL in the health care sector. Part of the debate has surrounded its psychometric properties as well as its application (Babakus and Mangold, 1991 and 1990; Carman 1990; Gotlieb, Grewal and Brown, 1994; Headley and Miller, 1993; Lam, 1997; McAlexander, Kaldenburg and Koenig, 1994; Taylor and Cronin, 1994; Vandamme and Leunis, 1993; Walbridge and Delene, 1993). Bowers, Swan and Koehler (1994) and Lytle and Mokwa (1992) pointed out that SERVQUAL does not cover all of the dimensions of health care services that are important to patients. Despite the debate, SERVQUAL has been used frequently in a modified form and studied extensively in health (O’Connor, Trinh and Shewchuk, 2000). The studies are predominantly in the “for profit” American health sector (Anderson, 1995; Bowers, Swan and Koehler, 1994; Duffy, Duffy and Kilbourne, 2001; Kilbourne,Duffy, Duffy and Giarchi, 2004; Licata, Mowen and Chakraborty, 1995; O’Connor, Trinh and Shewchuk, 2000; O’Connor, Shewchuck and Carney, 1994; Reidenbach and Sandifer-Smallwood, 1990). English (Curry and Sinclair, 2002; Curry, Stark and Summerhill, 1999; Silvestro, 2003; Wisniewski and Wisniewski, 2005; Youssef, Nel and Bovaird, 1995) and European studies exist (Sargeant and Kaehler, 1998). Only one study has been conducted in each of Hong Kong (Lam, 1997), Turkey (Pakdil and Harwood, 2005), and Mauritius (Ramsaran-Fowdar, 2005). A few Australian studies have been located (Baldwin and Sohal, 2003; Chan, Entrekin and Anderson, 2003; Dean, 1999; Wong, 2002). Table 1 summaries the Australian studies.

<table>
<thead>
<tr>
<th>Study</th>
<th>Method</th>
<th>Findings/Conclusion</th>
<th>Limitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean 1999</td>
<td>Medical Centre and Maternal and Child Health Centre Patients. N= 490 Modified SERVQUAL</td>
<td>Assurance, Tangibles, Empathy and Reliability/Responsiveness are important. Performance only to assess quality. Gap Scores for diagnostic purposes.</td>
<td>Majority of sample female. Based on Hult and Lukas framework which did not report testing for validity and reliability.</td>
</tr>
<tr>
<td>Wong 2002</td>
<td>Bone Densitometry Unit Patients. N=102 Abbreviated SERVQUAL</td>
<td>Performance only used to assess quality. Responsiveness, assurance and empathy are most important.</td>
<td>Majority of sample female.</td>
</tr>
<tr>
<td>Baldwin &amp; Sohal 2003</td>
<td>Dental Clinic Patients. N=357 Modified SERVQUAL</td>
<td>Fear and anxiety, punctuality, waiting times, collaborative treatment planning and opening times are most important.</td>
<td>Expectations not measured prior to service. Inter-rater reliability not performed.</td>
</tr>
<tr>
<td>Chan et al 2003</td>
<td>Hospital Staff. N=189 SERVQUAL- Perception only</td>
<td>Acceptable validity and reliability</td>
<td>Investigated staff not consumers and used perception component only.</td>
</tr>
</tbody>
</table>
Summary of Results

Of a total of 36 health service quality studies identified, three have significantly extended the SERVQUAL framework (Bowers, Swan and Koehler, 1994; Reidenbach and Sandifer-Smallwood, 1990; Sewell, 1997) and five have adopted an entirely different approach (Carman, 2000; Jun, Petersen and Zsidin, 1998; Licta Mowen and Chakaborty, 1995; Lytle and Mowka, 1992; Zifko-Baliga and Krampf, 1997). The results of the 36 studies are variable and none have been an exact replica of another. Some investigators failed to reproduce the five factors of the original model and concluded that SERVQUAL is unidimensional (Babakus and Mangold, 1992; Lam, 1997; McAlexander, Kaldenburg and Koenig, 1994) and others have concluded that the generic nature of the scale is unsuitable for hospital settings (Bowers, Swan and Taylor, 1994; Lam, 1997). Other investigators have suggested that perceived service quality varies with the type of service (Carman 2000; Kilbourne, Duffy, Duffy and Giarchi, 2004) and outcome (Lytle and Mowka, 1992; Silvestro, 2003). Work that has adopted a SERVQUAL/SERVPERF comparative approach has noted that health service recipients have uniformly high expectations across all SERVQUAL dimensions and concluded that measuring quality as performance only is superior (Dean, 1999; McAlexander, Kaldenburg and Koenig, 1994). Two studies have investigated Gap 1 (O’Connor, Shewchuk and Carney, 1994; O’Connor, Trinh and Shewchuk, 2000) and found that all categories of staff underestimated service recipients’ expectations for reliability, assurance, responsiveness and empathy but overestimated tangibles. Finally Tangibles have been shown in a number of these health sector studies to be the least important factor (Anderson, 1995; Curry and Sinclair, 2002; Curry, Stark and Summerhill, 1999; Jun Petersen and Zsidin, 1998; Lam, 1997; Sewell, 1997; O’Connor, Trinh and Shewchuk 2000). Therefore there is a need for a new model which moves away from the reliance on SERVQUAL and incorporates the findings from other studies.

A Proposed Model for Health Service Quality Measurement

A number of studies have highlighted that health service recipients have problems formulating realistic expectations, due in part to the difficulty patients face in judging the technical aspects of their care (Babakus and Mangold 1992; Taylor and Cronin, 1994; Lam 1997). These studies have advocated a perceptions only approach. In addition the complexity of health service provision challenges the measurement of functional quality (Bowers, Swan and Koehler, 1994; Vandamme and Leunis 1992) due to the interdependency and interaction of a number of interdisciplinary highly qualified service providers and the risks associated with biophysiological intervention. The design of a model to assess perceptions of public health care quality must incorporate criteria specific to this sector. The inclusion of the dependant variable, consumer’s perceived quality, into the total health quality equation offers a more holistic picture of health service quality and will ensure that health service programs meet the needs of consumers, providers and government. A review of health sector studies has revealed the need to include additional criteria to the five SERVQUAL dimensions due to the nature of health care, and a proposed model is presented in Figure 1. Criteria additional to the SERVQUAL ones identified as important are Personal Caring, due to the human
involvement in the service situation and the interdisciplinary structure of the service (Bowers Swan and Koehler, 1994; Carman, 2000; Curry and Sinclair, 2002; Jun, Petersen and Zsidin, 1998; Padkil and Hanwood, 2005); Joint Decision Making, due to its major role in the initial diagnostic process, the determination of the treatment approach and post treatment management (Bowers Swan and Koehler, 1994; Curry and Sinclair, 2002; Jun Petersen and Zsidin, 1998; Ramsaran-Fowdar, 2005; Swan and Koehler, 1994); Continuity, due to the multiple layers of service providers in health and supporting services and Collaboration due to the importance of interdisciplinary cooperation (Carman, 2000; Jun, Petersen and Zsidin, 1998); Outcomes, the difference the service makes to the person’s pain and suffering, quality of life and overall health and wellbeing (Licta and Mowen, 1995; Lytle and Mowka, 1992; Padkil and Hanwood, 2005; Swan and Koehler, 1994); and Perceived Risk/Medical Competence in particular with medical/pharmacological intervention (Lytle and Mowka, 1992; Ramsaran-Fowdar, 2005; Reidenback and Sandifer-Smallwood, 1990).

Figure 1. Proposed Model of Service Quality in Public Health Care

<table>
<thead>
<tr>
<th>Reliability</th>
<th>Dependable + Deliver + Accurate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsiveness</td>
<td>Provide + Prompt + Willing</td>
</tr>
<tr>
<td>Assurance</td>
<td>Explain + Secure + Requirements + Confidentiality</td>
</tr>
<tr>
<td>Personal Caring</td>
<td>Attention + Needs + Respect</td>
</tr>
<tr>
<td>Joint Decision Making</td>
<td>Partnership + Listen + Respond</td>
</tr>
<tr>
<td>Risk</td>
<td>Choice + Expectations</td>
</tr>
<tr>
<td>Continuity</td>
<td>Seamless + Linkages + Coordination</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Cooperation + Team + Knowledge</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Benefit + Improvement + Enhancement</td>
</tr>
<tr>
<td>Empathy</td>
<td>Personal Privacy + Support + Understanding</td>
</tr>
<tr>
<td>Tangibles</td>
<td>Cleanliness + Comfort + Equipment</td>
</tr>
</tbody>
</table>

Conclusion

The targeted assessment of perceived service quality in the public health sector offers the opportunity for the public sector to design services to better meet the needs of consumers, achieve improved outcomes and simultaneously reduce the costs created by consumer dissatisfaction. This model offers an alternative perspective to the measurement of health service quality, through specifically targeting criteria essential to the successful delivery of a quality health service.
REFERENCES


