



## An Emprirical Study on Service Quality Management at Bioclinical (Accredited) Laboratories, Chennai

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### ABSTRACT

*Patients are taking a greater role in decisions about their care and treatment. Patients' satisfaction is one important indicator of healthcare outcomes and plays key role in improving health service quality. Clinical laboratory's managers often assume that they know what customers want and set out to directly measure laboratory performance in each specific area.*

*A high-quality organization meets customers' needs. In clinical laboratory monitoring, patients' satisfaction is an important tool required for quality input. Comprehensive quality laboratory service is a challenging process which needs multiple sources of support from clients, service providers, managers and other stakeholders.*

*The aim of this paper is to examine how the clients' loyalty and confidence is influenced by the lab technicians' and physicians' interaction behavior towards the services of BIOCLINICAL LABORATORIES; CHENNAI.*

**KEYWORDS:** Client Satisfaction, Accreditation, Service Quality, etc.

### INTRODUCTION

There are many definitions of quality. The Institute of Medicine has defined 6 elements of quality (patient, safety, effectiveness, patient centeredness, timeliness, efficiency, equity) that it believes encompass important dimensions for medical care. In this investigation, the clinical laboratory services, especially an accredited laboratory services are equated with the degree to which a laboratory satisfies its primary customer. Accreditation is emerging as a preferred framework for building quality medical laboratory systems. Despite the low numbers of laboratories accredited to date, accreditation has the potential to improve the quality of healthcare for patients through the reduction of testing errors.

### REVIEW OF LITERATURE

The quality of healthcare services is an issue that is generating increasing interest internationally from academics and practitioners. Healthcare services affect quality of life more than any other service sector (Berry and Bendapudi, 2007). Healthcare services are high-credence services (Fisk *et al.*, 2007), characterized by a high degree of uncertainty and risk. Patients or their families usually lack the professional knowledge to judge the quality of the service being provided (Bejou *et al.*, 1996; Wray *et al.*, 1994) during the service delivery and even after receiving the service (Berry and Bendapudi, 2007).

From the literature review on this issue, we can see that the satisfaction formation process is not very consensual either in services, in general, or in healthcare. The conclusions from various studies about customer satisfaction in services found different antecedents in the formation of satisfaction, namely, perceived image, perceived value, expectations, and quality (functional and technical) (ECISI 1998; Anderson and Fornell 2000a, b).

However in the healthcare context some of these antecedents lose influence. For instance, Taylor and Cronin (1994) found that expectations fail to demonstrate a consistent direct relationship with patient's satisfaction. Also, perceived value can be difficult to apply in the healthcare context, since as Peyrot *et al.* (1993) pointed, usually patients do not know the treatments' real cost, it is difficult for them to evaluate perceived value of healthcare services.

### ABOUT BIOCLINICAL LABORATORY

BIOCLINICAL LABORATORIES LTD., was started in the year 1987. Its main objective is to provide Diagnostic services at an affordable cost. The lab service is also extended to X-Rays, ECGs, Ultrasound scans, DTHO, Colour display Investigation. It also provides packages for investigation such as Master Health check up, Diabetic Profile and so on in Chennai. The lab is packed with skilled laboratory employees and is equipped

with excellent Software. It has a very good infrastructure. To add up, BIOCLINICAL LABORATORIES LTD was also accredited with ISO by BMQR. By periodical monitoring, it also keeps up the effective QMS.

### QUALITY CONTROL

Centre has maintained both internal and external Quality Control and stringent with protocol by following SOP with calibrating equipments confirmed with the standards.

### Accreditation

Accreditation is defined as "A public recognition of the achievement of accreditation standards by a healthcare organization, demonstrated through an independent external peer assessment of that organization's level of performance in relation to the standards".

Accreditation benefits all stake holders. Accreditation results in high quality of care and patient safety. The patients get services by credential medical staff. Rights of patients are respected and protected. Patient satisfaction is regularly evaluated.

Efforts made to achieve accreditation may also lead to improvements in the management of laboratory networks by focusing attention on areas of greatest need and accelerating improvement in areas such as supply chain, training, and instrument maintenance. Laboratory accreditation may also have a positive influence on performance.

### Problem Area and Research Focus

Quality measures for product manufacturing are widely understood whereas it is very difficult to identify the measures for service industries. But quality measures specific for service operations have developed more slowly (Mills *et al.* 1983).

This slower development has been mainly attributed to intangibility (e.g. Regan 1963, Drucker 1974, Zeithaml *et al.* 1985), labour intensity (Flipo 1988) and complexity (Schmenner 1986). Ignoring these characteristics, quality management in the services industry has for too long been dominated by the logic of manufacturing

(which is seen as less complex, less labour intensive and less intangible). While comparing quality between service operations and product manufacturing, one of the basic claims has been that especially the complexity of service operations demands a more holistic approach including a customer-orientation to quality (e.g. Zeithaml *et al.* 1985, Gronroos 2000).

Although both customers and suppliers of any services believed that good service quality can have a positive impact on organisational per-

formance for both sides, a number of problems were identified. First, it is difficult to reach agreement on the attributes that make up service quality. Second, it is hard to rank these attributes in order of importance. Third, it is very hard to understand and measure the impact of service quality on customer satisfaction and ultimately supplier performance. Finally, all problems mentioned are further complicated due to the specific characteristics of the service.

**Research Focus**

By developing and testing a measurement instrument to assess the service quality of an accredited laboratory services, it is proposed to study the quality standard maintained by the BIOCLINICAL LABORATORIES LIMITED. An attempt was also made to study the level of customer satisfaction related to the quality system followed by that lab and to offer valuable suggestions to improve the service quality.

**Research Aim**

Our main aim is to identify the service quality indicators that are capable of acting as the determinators of the service quality of a well structured laboratory.

**Research Questions**

Focusing on services associated with a lab such as cleanliness, accuracy of the report, confidentiality, technology used, staff skills; this study will address the following questions:

Focusing on service providers: What service quality determinants are important for customers' perceived quality and customer satisfaction?

Focusing on the clients: What are the common expectations of an accredited laboratory for a client?

Focusing on the gap: What are the reasons for the gap between the perceived quality and the actual service quality enjoyed by the clients for an accredited laboratory?

To answer all the questions, it becomes imperative to identify the service quality variables that are to be captured and compared with the overall perceived service quality and patients' satisfaction.

**Methods**

**Study setting and context**

Laboratory based descriptive cross sectional study was conducted among the patients who visited the lab during 20<sup>th</sup> November to 10<sup>th</sup> December 2012.

**Study subjects**

Patients visited the BIOCLINICAL LABORATORY for their tests were taken as the sampling frame during the said period were the study subjects and the sample was limited on the stratified random basis.

**Sampling size and the procedure**

The sample size of 200 respondents was subsequently determined according to the proportion of the client load of the BIOCLINICAL LABORATORIES LIMITED.

**Measurement and Data collection**

- (a) The primary data was collected via face to face interviews, in which a well structured questionnaire was used. The questionnaire contains of satisfaction indicators. Standardized five point likert scale ranging from strongly disagree to strongly agree (1-5 points) were used for all items. Descriptive statistics were computed to ascertain the percentage of patient satisfaction in each satisfaction indicators that are likely to influence the level of satisfaction with the BIOCLINICAL LABORATORIES.
- (b). Secondary data collected through journals and magazines

**Statistical Analysis**

The data were coded edited and analyzed using SPSS latest version. Descriptive statistics were computed to ascertain the percentage of patient Satisfaction for each satisfactory indicator. Correlation coefficient and the chi-square tests were applied to identify the relationships between any two variables.

**Ethical consideration**

Before any attempt to collect data, due approval to conduct the study

was obtained from the lab and each participant (patient) was notified about the purpose of the study, the right to refuse to participate in the study, and anonymity and confidentiality of the information gathered. They were assured that they would not be penalized for not participating if they wished not to participate, and that their responses to the questions would have no effect on their care.

**Results**

Based on the result of this study, the majority of respondents were female (109), age group belonging to 46-70. (Table 1). From Table 2, it was identified that nearly 46% of the people had visited the lab two times over the period of time. From the table 3, it was identified that most of the patients had taken general tests than that of the diabetic, cardiac, antenatal, etc.,

**Table 1 Socio Demographic Characteristics (n=200)**

Variable	Number	Percentage
<b>AGE</b>		
<30	29	14
30-45	67	34
46-60	70	17
<b>GENDER</b>		
Male	91	46
Female	109	54

**Table2 No. of visits made by the clients**

No. of visits	Number	Percentage
One Time	60	30
Two Times	92	46
More than 2 Times	48	24

**Table 3 Type of tests taken by the clients**

Test taken	Number	Percentage
General	84	42
Diabetic	68	34
Cardiac	18	9
Antenatal	24	12
Others	6	3

Factors	Number				Percentage			
	HS	S	NSND	DS	HS	S	NSND	DS
ch of the staff	16	172	8	4	8	86	4	2
Cleanliness	14	176	6	4	7	88	3	2
Hygiene	10	178	8	4	5	89	4	2
Technology used	12	174	10	4	6	87	5	2
Report delivery	22	160	12	6	11	80	6	3
Accuracy of the test	46	140	8	6	24	70	4	3
Availability of test	50	80	-	50	25	40	-	2
Testing process	44	142	10	4	22	71	5	5
Charge	68	120	6	6	34	60	3	2
Interpretation detail	66	124	4	6	33	62	2	3
Parking facility	36	44	4	46	18	22	2	3

Safety	70	50	54	12	35	25	27	2
Staff skill	66	124	8	4	33	62	4	3
Patients well being	70	20	6	4	35	60	3	6
Standard machineries	54	110	32	4	27	55	16	2
Confidential	84	108	4	4	42	54	2	2
Ethics	88	100	4	8	44	50	2	2
Competency of technicians	64	120	8	8	32	60	4	2
Quality of service	78	116	2	4	39	58	1	4

**Table 4 Clients' level of satisfaction on various aspects Level of satisfaction towards the services of BIOCLINICAL LABORATORIES LTD.**

The result regarding respondents' satisfaction with different dimensions of BIOCLINICAL LABORATORIES LTD is presented in Table 4. Generally, most of the respondents were satisfied with the service indicators such as approach of the staff(86%), cleanliness(88%), hygiene(89%), technology used(87%),report delivery(80%), accuracy of the test(70%), Accuracy of the test(70%), Availability of test(40%), Testing process (71%), Charge(60%), Interpretation detail(62%), Parking facility(22%), Safety(27%),Staff skill(62%), Patients well being(60%) ,Standard machineries(55%), Confidential(54%), Ethics(50%), Competency of technicians(60%),Quality of service(58%).

**Relationship between the patients' level of satisfaction and independent variables**

The chi-square of independence was conducted to assess whether there is a strong relationship between the test taken by the respondents and opinion about the quality of service rendered by the staff. The results from the cross-tabulations analysis showed that there is a strong relationship between the test taken by the respondents and opinion about the quality of service rendered by the staff.

**BIVARIATE TABULATION**

	OPN QS	HS	S	NSNDS	DS	HDS
GEN						
MALE		37	51	2	1	0
FEMALE		40	65	1	3	0

**EXPECTED FREQUENCY CALCULATION**

	OPN QS	HS	S	NSNDS	DS	HDS	TOTAL
GEN							
MALE		35.05	52.78	1.365	1.82	0	91
FEMALE		41.965	63.22	1.635	2.18	0	109
TOTAL		77	116	3	4	0	200

**TABLE 5 CHI SQUARE CALCULATION**

OBSD FRQY	EXPD FRQY	O - E	(O - E) <sup>2</sup>	(O - E) <sup>2</sup> / E
37	35.05	1.95	3.8025	0.1085
51	52.78	1.78	3.1684	0.06
2	1.365	0.635	0.403225	0.2954
1	1.82	0.18	0.0324	0.0115
40	41.965	1.965	3.861225	0.0920
65	63.22	1.78	3.1684	0.0501
1	1.635	0.635	0.403225	0.2466
3	2.18	0.82	0.6724	0.3084
TOTAL				1.1725

OPN QS Opinion about Quality of Service

GEN Gender

HS Highly Satisfied

S Satisfied

NSND Neither Satisfied nor Dissatisfied

HDS Highly Dissatisfied

DS Dissatisfied

**Relationship between overall service quality and client satisfaction towards the services**

Null hypothesis: There is no relationship between the test taken by the respondents and opinion about the quality of service rendered by the staff.

**TABLE 6 - CORRELATION COEFFICIENT**

X	Y	XY	X <sup>2</sup>	Y <sup>2</sup>
84	77	6468	7056	5929
68	116	7888	4624	13456
18	3	54	324	9
24	4	96	576	16
6	0	0	36	0
SX=200	SY=200	SXY=14506	SX <sup>2</sup> =12616	SY <sup>2</sup> =19410

**X Test taken**

**Y Opinion about the quality of services**

**Discussion**

This study has revealed that overall client satisfaction level with the BIOCLINICAL LABORATORY LTD were nearly 85% that showed a vast majority of the respondents were satisfied with almost all aspects of laboratory services they received. The results reported here could be explained in several ways. One explanation is that the structure of the questionnaire was limited in indicating underlying factors. On the other hand, the high satisfaction could be due to introduction of social desirability biases by clients. Clients might not be ready to interact freely since the interviews were carried out inside the lab. Again, it should be remembered that, unless special precautions are taken, clients may be reluctant to reveal their opinions for fear of alienating their attendants.

**LIMITATIONS OF THE STUDY**

There are several limitations to the design of this study. One limitation is related to the selection bias. This was due to the fact that the participation in the study was based on voluntary basis. This consequently increases the result of satisfaction from BIOCLINICAL LABORATORY SERVICES. On other hand, the clients might have given biased information since interview was conducted in the lab. Furthermore a sample of 200 patients was not big enough to detect any significant association between the patients' expectations and their level of satisfaction.

**CONCLUSION**

Overall the satisfaction survey showed that most of the respondents were satisfied with the services offered by the BIOCLINICAL LABORATORY SERVICES. However the respondents suggested that several factors such as parking facilities and the availability of tests must be enhanced to improve the overall satisfaction. Also higher level of measure should be taken to keep up confidentiality. Ability of the physicians may also increase the level of satisfaction.

**Finally, the following observations were derived upon:**

First, the systematic assessment of perceived service quality and their satisfaction is an important element to design the marketing strategy for healthcare services overtime.

Second, the physicians and lab technicians of the lab should work together to enhance their responses to clients' requests and enquiries, treat clients with high emotions and kindness and improve tangible assets of lab.

Third, the physicians and lab technicians of the lab should build cultural values to renew the operational system, and recruit qualified managerial and medical staff to offer an excellent and constant level of service quality overtime.

The results suggest that the competency and the behavior of physicians are the most important characteristics in the minds of consumers. Moreover, it was found that laboratories are evaluated along: (1) inter-personal, (2) amenities, (3) capabilities, and (4) accessibility dimensions. These findings are consistent with previous research in this regard.

## REFERENCES

1. Laboratory General Checklist. Laboratory Accreditation Program., Northfield, College of American Pathologists;2006.GEN.20368 | 2. Comprehensive Accreditation Manual for Laboratory and Point of Care Testing. Oakbrook Terrace, Ill: Joint Commission on Accreditation for Healthcare Organizations; 2005-2006.Pl.1.10. | 3. Howanitz PJ Quality Assurance measurements in department of pathology and laboratory medicine. Arch Pathol Lab Med.1990; 114:1131-1135. | 4. Miller KA Dale JC.Physician Satisfaction with Clinical Laboratory Service,99-03: Q-Probes.Northfield, Ill; College of American Pathologists; 1999. | 5. Institute of Medicine. Crossing the Quality Chasm. Washington, DC: National | Academy Press; March 2001