IMPLEMENTATION OF CUSTOMER RELATIONSHIP MANAGEMENT (CRM) AS AN EFFORT TO IMPROVING THE QUALITY OF PATIENT SATISFACTION IN CICENDO EYE HOSPITAL BANDUNG

Pranna Sutejo[1,] Riani Lubis, S.T., M.T.[2]

[1,2]Teknik Informatika – Universitas Komputer Indonesia
Jalan Dipatiukur No.112-116, Coblong, Bandung, Jawa Barat 40132
E-mail : bouznapranna@gmail.com[1], riani-lubis@email.unikom.ac.id[2]

ABSTRACT

Cicendo Eye Hospital is the only hospital owned by the government of Indonesia eyes. The hospital is designated as the highest or referral hospitals also referred to as the center of government. There are two groups of health care in which Cicendo Eye Hospital outpatient and inpatient. Outpatient treatment is medical service to a patient for the purpose of observation, diagnosis, treatment, rehabilitation, and other health, without requiring the patient is hospitalized. While inpatient services is service to patients admitted to hospital who occupies care beds for observation purposes, diagnosis, therapy, medical rehabilitation and other medical services. External customer satisfaction surveys in Cicendo Eye Hospital have not been able to measure the quality of service that exists between perceptions and expectations of patients to services, which can cause Cicendo Eye Hospital patients will experience disappointment and loss of confidence in the hospital.

Of these problems led to the idea for designing and implementing Customer Relationship Management strategy, which also can help public relations officer in recommending suggestions for improvement of hospital services effective in accordance with the expectations and needs of the patient.

After going through the testing phase, this information system can solve problems that occur. Cicendo Eye Hospital can know how big the difference between the patient's perception of the services that have been received by the expectations of patients with the services to be received, so as to maintain the quality of service to the patient satisfaction Eye Hospital Cicendo.

Keywords **:** *Customer Relationship Management, Service Quality, Customer Satisfaction, ServQual, Cicendo Eye Hospital*

1. INTRODUCTION

Cicendo Eye Hospital is the only hospital eye government-owned Indonesian republic under the Directorate General of Medical Services Ministry of Health of the Republic of Indonesia. The hospital is designated as the highest or referral hospitals also referred to as the center of government. Patients at the Eye Hospital Cicendo categorized into two groups: general patients and patients contractor. General patients are patients who can provide a direct benefit to the institution where the patient does not use the services of any insurance. While the contractor patients are patients who have insurance which all payments for treatment are borne by the contractor. There are two groups of health care in which Cicendo Eye Hospital outpatient and inpatient. Outpatient treatment is medical service to a patient for the purpose of observation, diagnosis, treatment, rehabilitation, and other health, without requiring the patient is hospitalized. While inpatient services is service to patients admitted to hospital who occupies care beds for observation purposes, diagnosis, therapy, medical rehabilitation and other medical services.

Based on interviews conducted to Ms. Anisa as Public Relations officer Cicendo Eye Hospital, said patients can express criticism or suggestions to health services that have been received. Data recapitulation of suggestions and criticisms customer satisfaction survey during April 2016 - June 2016, patients were more complaints about the service element compared with hospital facilities.

In addition the results of observations in Cicendo Eye Hospital, according to the report of the external customer satisfaction surveys in Cicendo Eye Hospital during April 2016 - June 2016, the value of the conversion interval Community Satisfaction Index (IKM) for outpatient services that is equal to 75.21. While the value of the conversion interval IKM for inpatient care that is equal to 81.54. IKM conversion interval value is obtained from the average value of each element of health care outpatient and inpatient. From these data, the hospital must make improvements in the quality of service priority service element which has the lowest

value, while the service element that has a value high enough to be kept on hold. However, a survey of external customer satisfaction in Cicendo Eye Hospital have not been able to measure the quality of service that exists between perceptions and expectations of patients to services, so the Eye Hospital Cicendo not know how big the difference between the patient's perception of the services that have been received by the expectations of patients to services will be accepted.

Customer satisfaction is the level of compatibility between products and services desired by the fact that acceptable. The concordance rate is the result of the assessment carried out by the consumer based on knowledge and experience. To get a picture of customer satisfaction, it is important to know the meaning of quality of service. The poor quality of services rendered to the customers the service provider has realized resulted in many losses suffered by the company. They were disappointed to not only leave the services, but also will tell ser vices received to others [1]. In this case can cause Cicendo Eye Hospital patients will experience disappointment and loss of confidence in the hospital, so the resulting image can be decreased Cicendo Eye Hospital.

While based on the SWOT analysis, obtained the necessary strategies by Cicendo Eye Hospital in order to maintain the quality of service by increasing the professionalism of employees in an effort to maintenance and improvement of health services in order to provide health care according to the patient's needs. Meanwhile, Customer Relationship Management (CRM) is a business strategy that regulates the relationship between the customer with the company so that customers can choose to continue the mutually beneficial relationship and to anticipate that the relationship becomes unprofitable enterprise [2]. Therefore, the strategy needed by implementing Customer Relationship Management (CRM) as an effort to improve quality of service to the patient satisfaction Eye Hospital Cicendo.

Based on the description of the background issues that have been described previously, the formulation of research problems are how to implement a Customer Relationship Management (CRM) in order to maintain the quality of service by increasing the professionalism of employees as an effort to improve quality of service to the patient satisfaction Eye Hospital Cicendo.

While the goal to be achieved in this research is to help public relations officer in recommending suggestions for improvement of hospital services effective in accordance with the expectations and needs of the patient.

2. CONTENT OF RESEARCH

2.1 Quality of Services

Quality of service is defined as the delivery of services that will exceed the level of customer interest. The kind of quality that are used to assess the quality of services are as follows [6]:

1. Quality engineering (outcome), namely the quality of the work of service delivery itself.
2. Quality of service (process), namely the quality of the delivery of these services.

Because services are not visible and the quality of engineering services can not always be evaluated accurately, customers trying to assess the quality of services based on what he felt, that the attributes that represent the quality of the process and quality of service [6].

2.2 Kepuasan Pelanggan

Customer satisfaction is defined as customer responses to a mismatch between the importance of earlier and actual performance had felt after use. One of the factors that determine customer satisfaction is the customer's perception about the quality of services that focuses on five dimensions of services. Customer satisfaction, in addition influenced by the perception of service quality, is also determined by the quality of the product, the price, and the factors that are personal, and that is the situation for a moment. Customer perception regarding quality of service does not require customers to use the services of the first to provide an assessment [6].

2.3 Customer Relationship Management (CRM)

Buttle asserts that "CRM is a business strategy that uses information technology to produce companies that are competent, credible and integrated with the customer based on the customer's side so that all processes and interactions with customers to help maintaining and improving relationships profitable" [2]. CRM is a business strategy that regulates the relationship between the customer with the company so that customers can choose to continue the mutually beneficial relationship and to anticipate that the relationship becomes unprofitable companies.

2.3.1 Analytical CRM

Analytical CRM is used to exploit customer data in order to enhance their value (and the value of the company). This system was developed based on information about consumers. Customer data can be obtained from the information centers or data banks owned by each company's relevant, namely sales data (history of purchases of goods or services by customers), financial data (payment history or credit score), marketing data (consumer response to advertising campaigns , product loyalty scale data), and data services. Furthermore, the internal data can be supplemented with external data, such data is

geodemografis and data on consumer lifestyle provided by business intelligence organizations [2].

2.3.2 Value Chain CRM

Buttle asserts that "CRM is a business strategy that uses information technology to produce companies that are competent, credible and integrated with the customer based on the customer's side so that all processes and interactions with customers to help maintaining and improving relationships profitable" [2]. CRM is a business strategy that regulates the relationship between the customer with the company so that customers can choose to continue the mutually beneficial relationship and to anticipate that the relationship becomes unprofitable companies. Here is a CRM value chain which can be seen in Figure 1.

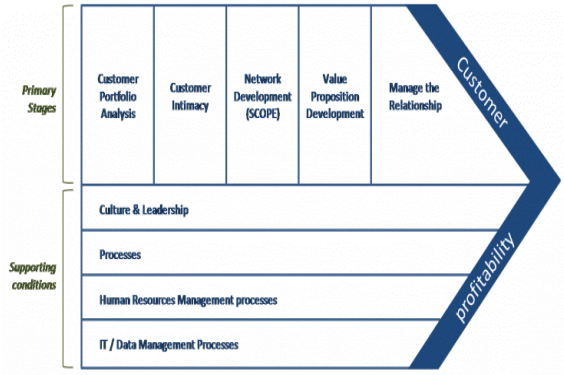


Figure 1 Value Chain CRM F.Buttle

This model identifies five important stage in the development and implementation of CRM strategies. Briefly, five stages are as follows [2].

1. Analysis of the customer portfolio

This stage involves analyzing the actual pelannggan base and the potential for mengidetifikasi which customers want to be served in the future. Strategically, the top of the list would be a significant customer, including those that will generate profits (value) in the future.

2. Customer Intimacy

At this stage recognizable identity, history, demands, expectations, and customer choice.

3. Network Development

To identify, describe, and manage relationships with network members in the company. This includes organizations and people who contributed to the creation and delivery of value proposition for the customer selected. Networks can include members from outside such as suppliers, partners and owners / investors, and also the important internal, namely the employee.

4. Development of a value proposition

This stage involves identifying sources of value for customers and the creation of a proposition and experience to meet the needs, expectations, and their options.

5. Manage the customer lifecycle

The life cycle of the customer is the customer's journey from the status of 'suspected' to 'support'. Life cycle management requires attention to the processes and structures.

Here is a translation of the Conditions Supporting CRM value chain proposed by Buttle. Are as follows:

1. Leadership and Organizational Culture

At the level of strategic CRM, leadership is needed to establish whether the orientation (market) customers, product sales, or production orientation will guide the company in the future. Business orientation that is different very likely have a marketing or sales orientation that is different also from the orientation of the product or production. The mission, vision, and values of an organization will be obtained or reflected on the business orientation adopted.

2. Data and Information Technology

The definition for CRM emphasize the importance of quality customer data. Acquisition, storage, enhancement, maintenance, distribution, and use of customer information is a very important element for the CRM strategy. The data requirements for a CRM strategy is determined by the decisions and activities designed and conducted in the five major stages CRM value chain.

3. Human Resources

HR is supporting the third condition for the successful implementation of CRM. This is because:

a. HR to develop a CRM strategy
b. HR selecting IT solutions
c. HR implementing and using IT solutions
d. Cross-functional HR coordinate with each other to run CRM
e. HR create and keep a customer database
f. HR designing the process of marketing, sales and service
g. HR contributes greatly to customer satisfaction and customer care when they interact with customers.

Skills, knowledge, and attitudes necessary for successful performance of CRM may need to be re-examined and improved. The knowledge and skills required include how to segment customers, designing experiments, and to understand the experimental data using statistical procedures. HR firms may need to be trained in this competency as well as other competencies.

4. Process

The process is a fourth supporting conditions for the delivery of CRM. The process is the

way in which everything is done by the company. From the perspective of CRM, the process needs to be designed and operated so that they contribute to the creation of value, or at least do not undermine the value that has been created for customers. That condition implies efficiency (low cost) and effectiveness (delivery of desired results).

2.4 Information System

Information Systems is a man-made system which generally consists of a set of computer-based and manual components are made to collect, store, and manage data and provide output information to the user [3].

The information system provides added value to the process, production, quality, management, decision making, and problem solving as well as a competitive advantage that is of course very useful for business activities. There are four important role of information systems in an organization, namely [3]:

1. Participate in the implementation of tasks.
2. Linking the planning, execution and control within a subsystem.
3. Coordinate subsystems.
4. Integrating subsystems.

2.5 Questionnaire

Questionnaires are instruments for data collection, where participants or respondents filled questions or statements given by the researchers. Researchers can use the questionnaire to obtain data associated with thoughts, feelings, attitudes, beliefs, values, perceptions, personality and behavior of respondents. In other words, researchers can perform measurements of a variety of characteristics by using a questionnaire [4].

2.6 Likert Scale

Likert Scale used to measure attitudes, opinions, and perceptions of a person or a group of social phenomenon. In research, this social phenomenon has been set specifically by penelit, hereinafter referred to as the study variables. With Likert scale, then the variable to be measured are translated into indicator variables. Then indicators are used as a starting point to construct items instruments which can be a statement or a question.

Answer every item instrument that uses a Likert scale has a gradation from very positive to very negative. For the purposes of quantitative analysis, the answer can be given a score, for example:

a. Agree / always / very positive given the score 5
b. Agree / often / positive were given a score of 4
c. Hesitant / sometimes / neutral given a score of 3
d. Disagree / hardly ever / negative given a score of 2
e. Strongly disagree / never / be given a score of 1

The research instrument that uses a Likert scale can be made in the form of multiple choice checklist or [4].

2.7 Questionnaire Data Processing

Data processing questionnaires contain calculations gap 5 that customer expectations regarding service delivery to the customer reality perceived by the customer (customer in this study were patients). The formula for calculating the reality nor the expectations of customers regarding the services are:

$$\sum_{yi} = (\sum TB \times 1) + (\sum KB \times 2) + (\sum CB \times 3) + (\sum B \times 4) + (\sum SB \times 5) \quad (2,1)$$

Information:

$\sum_{yi}$ = a weighted sum of the answers to the statement or expectation fact variable to -i

$\sum$ TB = the number of people who chose the answer is not good

$\sum$ KB = the number of people who chose the answer is deficient

$\sum$ CB = jumlah orang yang memilih jawaban cukup baik

$\sum$ B = the number of people who choose the answer either

$\sum$ SB = the number of people who choose the answer very well

1,2,3,4,5 = score on a Likert scale

As for the average respondent's answer can be calculated by the equation:

$$\overline{X\,i} = \frac{\sum xi}{n} \quad (2,2)$$

Information:

$\overline{X\,i}$ = average respondents to attribute -i

$\sum_{yi}$ = the amount of weight the answers to attribute statements to - i

n = the number of respondents

The greater the gap resulting from a calculation Servqual Gap 5, the lack of good quality of these services. Therefore, priority repair service quality conducted on the largest gap or gaps. Conversely, the size of a gap (gap close to zero or positive), the better the quality of these services.

2.8 Service Quality

Servqual method is a method used to measure the quality of service of the attributes of each dimension, so the value will be gap (the gap) is merupakam difference between consumer perceptions of the services that have been received in the hope to be received. The measurement method is to measure the quality of service of the attributes of each dimension, so that would be obtained value gap is the difference between consumer perceptions of service received by the consumer expectations of

services that will be received [9]. According to Parasuraman, there are five dimensions of SERVQUAL as follows:

1. Tangibles

The ability of a company to demonstrate its existence on external parties. Appearance and abilities of physical infrastructure companies and the state of the surrounding environment is tangible proof of the services provided by the service provider. This includes physical facilities (building, warehouse, and others), technology (equipment and supplies used), as well as the appearance of employees. In short it can be defined as the appearance of physical facilities, equipment, personnel, and communication materials.

2. Reliability

The company's ability to deliver services as promised are accurate and reliable. Should customers expect timely means of performance, service without fault, sympathetic attitude and with high accuracy. In short it can be defined as the ability to provide the promised service accurately, timely, and trustworthy.

3. Responsiveness

A willingness to help and provide fast service (responsiveness) and right to the customer, with the delivery of clear information. Allowing consumers to wait for no apparent reason causing a negative perception in the quality of service. In short it can be interpreted as a willingness to help customers by providing good service and fast.

4. Assurance (Security and certainty)

Knowledge, politeness, and the ability of the company's employees to gain confidence of customers to the company. Consists of components: communication, credibility, security, competence and manners. In short it can be defined as the knowledge and hospitality personnel and the ability of personnel to be trusted and believed.

5. Empathy (Empathy)

Providing a genuine concern and a private individual or given to customers by striving to understand the desire of consumers to which a company is expected to have an understanding and knowledge of the customer, understanding customers' specific needs, and has the operating time that is convenient for the customer. In short it can be interpreted as an effort to know and understand the needs of customers on an individual basis.

According to Parasuraman, Reliability has consistently been the most critical dimension, then the level of assurance to the 2nd, 3rd by tangibles (mainly by the banking company), 4th by responsiveness, and lower levels of most interest is empathy. In addition there are five gaps in Servqual methods, namely:

1. Gap 1, the gap between perceptions of management's expectations of consumers with consumer expectations.
2. Gap 2, the gaps in service quality specifications.
3. Gap 3, the gaps in service delivery. Gap 3 is negative occurs because the delivery services can not reach the target and there is no measurement of the target.
4. Gap 4, ie the gap between the delivery of services with external communications.
5. Gap 5, the gap between the expectations of consumers with consumer perception. This gap means that the services are perceived not in accordance with the expected services.

Parasuraman, Zeithaml, and Berry compose Customer Satisfaction following formula:

$Q = P - E$ (2.3)

Where:

Q = Score SERVQUAL

E = Score Expectation or customer expectations for service quality

P = Score perception of the service actually received

2.9 Problem Analysis

Analysis of the problem is an assumption of the issues that will be described in the procedure. From the research conducted found a problem that customer satisfaction surveys external Cicendo Eye Hospital have not been able to measure the quality of service that exists between perceptions and expectations of patients to services, so the Eye Hospital Cicendo not know how big the difference between the patient's perception of the service that has been accepted with expectations of patients to services that will be accepted. In this case can cause Cicendo Eye Hospital patients will experience disappointment and loss of confidence in the hospital, so the resulting image can be decreased Cicendo Eye Hospital.

2.10 Value Chain Analysis of CRM in the Scope of Service Quality

In this analysis, conducted using a model Value Chain of F. Buttle, where the stages of this model is to identify five important stage in the development strategy of CRM service quality. Each of the five stages are done using a number of tools and processes. This model also identifies areas that can be optimized for maximum efficiency and profitability with a number of supporting conditions have posted facilitates implementation. Model Value Chain can be seen in Figure 2.

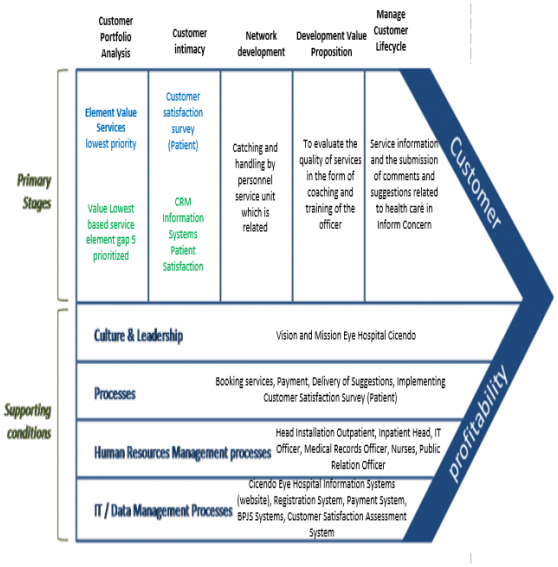


Figure 2 Value Chain CRM Cicendo Eye Hospital Bandung in Scope of Quality Services

2.11 Customer Satisfaction Analysis

In this study, the customer is defined as a patient Cicendo Eye Hospital. Customer satisfaction analysis carried out through the following stages:

1. Identify the attributes of service quality and the characteristics of the respondent
2. Preparation and dissemination of research questionnaires
3. Data processing questionnaires
4. Recommendations suggestions for improvements of service quality

2.11.1 Identification of service quality attributes and characteristics of respondents

Identify the attributes of service quality is done by aligning elements of the questionnaire execution pelayananan external customer satisfaction surveys in Cicendo Eye Hospital based on the Ministry of Administrative Reform No.KEP / 25M.PAN / 2/2004 dated February 24, 2004 with five dimensions of service quality of Service Quality ,

Variable U1 to U14 are variables from the sequences questionnaire statement that already exists on the external customer satisfaction surveys in Cicendo Eye Hospital.

The service element Cicendo Eye Hospital which has been harmonized can be seen in Table 1.

Table 1 The alignment elements Cicendo Eye Hospital services with Dimension Servqual

Servqual Dimensions	Var	Criteria for Customer Satisfaction
Tangibles	U13	Comfort in environmental services unit
Reliability	U1	Ease of service procedures in this unit
	U2	Compliance with the requirements of service with the type of service
	U3	Clarity and certainty of officers serving
	U6	The ability of officers in providing services
	U8	Fairness to get service in this unit
Responsiveness	U7	Speed in this service unit
Assurance	U4	Discipline officers in providing services
	U5	Officer's responsibility in providing services
	U9	Courtesy and friendliness of staff in providing services
	U10	The reasonableness of fees for services
	U11	Correspondence between the fees paid to the cost has been determined
	U12	The accuracy of the implementation of the service time schedule
	U14	Security services in this unit
Empathy		

According to the table 1 is known that there is no point statement questionnaire identified the dimensions of empathy, because of external customer satisfaction survey questionnaire in Cicendo Eye Hospital no statement service elements that lead to the definition of the empathy dimension.

While the identification of the characteristics of respondents was conducted to determine the type of respondent in accordance with the characteristics of the study. Respondents in this study were inpatients and outpatients in Cicendo Eye Hospital.

2.11.2 Compilation and Dissemination Questionnaire

Questionnaires will be formed based on the criteria of the questionnaire of service elements implementation of external customer satisfaction surveys in Cicendo Eye Hospital as well as the results of the identification attributes of service quality research based on five dimensions of Service Quality are in Table 1.

In preparing this questionnaire, a questionnaire on the elements pelayananan implementation of external customer satisfaction surveys in Cicendo Eye Hospital which has criteria that are interconnected service elements will be classified into one statement questionnaire. Then there is the statement that formed the new questionnaire, which draws on the methods of Service Quality. Each of the statements of this questionnaire is given a value corresponding variables of dimensions of the order of statements servqualnya and questionnaires. The questionnaire can be seen in Table 2.

Table 1 Preparation of the questionnaire with Dimension Servqual

Servqual Dimensions	Var	Criteria for Customer Satisfaction
Tangibles	T1	Comfort in the environmental services unit **(U13)**
	T2	The hospital has the latest equipment and technology (modern)
Reliability	R1	Ease of service procedures in this unit **(U1, U2)**
	R2	The ability of staff in delivering services **(U3, U4, U5, U6)**
Responsiveness	RES1	Speed in this service unit **(U7)**
Assurance	A1	Discipline officers in providing services **(U4, U8, U14)**
	A2	Courtesy and friendliness of staff in delivering services **(U9)**
	A3	The reasonableness of fees for services **(U10, U11)**
Empathy	E1	The hospital has an operating time that is suitable and convenient for all patients

From the results of questionnaires that have been established based on five dimensions will be collated into a preliminary questionnaire consisting of elements of the new service. Variable V1 to V9 is a variable of the preparation of the questionnaire with the dimensions servqual in Table 2 which will be sorted into the preliminary questionnaire.

As for the preparation of a preliminary questionnaire that has been distributed can be seen in Table 3.

Table 3 Questionnaire Introduction

Var	Criteria for Customer Satisfaction
V1	Comfort in the environmental services unit **(T1)**
V2	The hospital has the latest equipment and technology (modern) **(T2)**
V3	Ease of service procedures in this unit **(R1)**
V4	The ability of staff in delivering services **(R2)**
V5	Speed in this service unit **(RES1)**
V6	Discipline officers in providing services **(A1)**
V7	Courtesy and friendliness of staff in delivering services **(A2)**
V8	The reasonableness of fees for services **(A3)**
V9	The hospital has an operating time that is suitable and convenient for all patients **(A4)**

The results of the preparation of the questionnaire distributed to 30 inpatients and 30 outpatients at the Eye Hospital Cicendo using Likert scale. There are two types of questionnaire were distributed as follows:

1. **Questionnaires perception**

Questionnaire on the perception of the service is formed of drafting preliminary questionnaires to measure the level of patient to the same perception of service actually received. Variable P1 to P9 is a variable of a sequence of statements questionnaires perception of table 3.

The questionnaire for the perception of the service that has been formed from the preliminary questionnaire can be seen in Table 4.

Table 4 Questionnaires Perception

Var	Criteria for Customer Satisfaction
P1	Comfort in the environmental services unit **(V1)**
P2	The hospital has the latest equipment and technology (modern) **(V2)**
P3	Ease of service procedures in this unit **(V3)**
P4	The ability of staff in delivering services **(V4)**
P5	Speed in this service unit **(V5)**
P6	Discipline officers in providing services **(V6)**
P7	Courtesy and friendliness of staff in delivering services **(V7)**
P8	The reasonableness of fees for services **(V8)**
P9	The hospital has an operating time that is suitable and convenient for all patients **(V9)**

2. **Questionnaires expectation**

Questionnaire on expectations formed ministry of drafting preliminary questionnaires to measure the level of patient expectations of service delivery. EXP1 up EXP9 variable is a variable of a sequence of statements of expectation questionnaire Table 3.

The questionnaire for services already established expectations formed from the preliminary questionnaire can be seen in Table 5

Table 5 Questionnaires expectation

Var	Criteria for Customer Satisfaction
EXP1	Comfort in the environmental services unit **(V1)**
EXP2	The hospital has the latest equipment and technology (modern) **(V2)**
EXP3	Ease of service procedures in this unit **(V3)**
EXP4	The ability of staff in delivering services **(V4)**
EXP5	Speed in this service unit **(V5)**
EXP6	Discipline officers in providing services **(V6)**
	Courtesy and friendliness of staff in delivering services **(V7)**
EXP7	The reasonableness of fees for services **(V8)**
EXP8	The hospital has an operating time that is suitable and convenient for all
EXP9	patients **(V9)**

2.11.3 Data Processing Questionnaire

Data processing questionnaire containing gap analysis calculation method Service Quality. The gap analysis of methods Service Quality can be seen in Table 6.

Table 6 Gap analysis of methods Service Quality

Gap 1	That is the gap between the perception of the consumer expectation management with customers' expectations.
Gap 2	That is the gaps in service quality specifications.
Gap 3	That is the gaps in service delivery. Gap 3 is negative occurs because the delivery services can not reach the target and there is no measurement of the target.
Gap 4	That is the gap between the delivery of services with external communications.
Gap 5	That is the gap between the expectations of consumers with consumer perception. This gap means that the services are perceived not in accordance with the expected services.

In this questionnaire data processing stages, will be calculated gap 5 of methods Service Quality. Gap 5 chosen because it can measure the gap between customer expectations regarding service delivery to the customer reality perceived by the customer (customer in this study were patients). Calculation of gap 5 was collected from the questionnaire answers perceptions and expectations of each of 30 respondents (inpatient and outpatient). Here are the steps being taken in the questionnaire data processing outpatient services:

1. Questionnaire Date Processing Outpatient Services

Data processing questionnaires outpatient services performed to determine how much the value of the average expectations and perceptions of patients about outpatient services to the realities and expectations of service perceived by the patient (gap 5). Here is an example of calculations performed for the service element attribute V1:

1) Calculate the value of weighting

To find the value of the weighting on the expected service (NPE) using the formula (2.1), then obtained on the following calculation:

NPE = (∑ TB x 1) + (∑KB x 2) + (∑ CB x 3) + (∑ B x 4) + (∑ SB x 5)
= (0 x 1) + (2 x 2) + (13 x 3) + (12 x 4) + (3 x 5)
= 106

To find the value of the weighting on perceptions of service (NPP) using the formula (2.1), then obtained on the following calculation:

NPP = (∑TB x 1) + (∑KB x 2) + (∑ CB x 3) + (∑ B x 4) + (∑ SB x 5)
= (0 x 1) + (3 x 2) + (13 x 3) + (12 x 4) + (2 x 5)
= 103

2) Calculate the average Expecetations and Perceptions

For finding the average expectation (E) and average perception (P) using the formula (2.2), then obtained on the following calculation:

a. The Average Expectation (E)

$E = \frac{106}{30} = 3{,}53$

Calculation shows that the average patient expectation (E) of the attributes of V1 on outpatient care amounted to 3.50.

b. The Average Perception (P)

$P = \frac{103}{30} = 3{,}43$

Calculation shows that the average perception of the patient (P) to attribute V1 on outpatient care amounted to 3.43.

3) Calculate the value gap 5 (Q)

To calculate the value gap 5 (Q) using the formula (2.3), then obtained on the following calculation:

Q = P – E
= 3,43 – 3,50
= -0,10

Calculation shows that the gap 5 (Q) to attribute V1 on outpatient care amounted to -0.07.

The larger the negative value gap 5 (Q) resulting from a calculation Servqual this, the less good the quality of the service. Conversely, if the value gap 5 is close to zero or positive, the better the quality of these services.

Based on all of these calculations can be obtained values gap 5 against all attributes of the service element in the quality of outpatient care can be seen in Table 7.

Table 7 The calculation of the value gap 5 on outpatient services

Atribut Unsur Pelayanan	Ekspektasi Pelayanan		Persepsi Pelayanan		Nilai Gap 5 (Q)
	Nilai Pembobotan (NPE)	Rata-rata Ekspektasi (E)	Nilai Pembobotan (NPP)	Rata-rata Persepsi (P)	
V1	106	3,53	103	3,43	-0,10
V2	120	4,00	119	3,97	-0,03
V3	100	3,33	100	3,33	0
V4	110	3,67	110	3,67	0
V5	96	3,20	88	2,93	-0,27
V6	101	3,37	100	3,33	-0,03
V7	86	2,87	84	2,80	-0,07
V8	97	3,23	96	3,20	-0,10
V9	115	3,83	116	3,87	0,03
Total		31,07		30,40	

From Table 7 it can be seen that the attributes that have the greatest negative gap value 5 V5 attributes contained in the statement that "The speed in this service unit" with a value of -0.27.

2.11.4 Repair Advice on Quality of Service

In giving advice on service quality improvement in ambulatory care or hospitalization, prioritized on the service element that has a value of

5 biggest negative gap. The suggestion shows that each service element which has the largest negative gap value 5 should be evaluated, improved and upgraded to conform to the expectations and needs of the patient. Here is an example of the provision of advisory recommendations on the improvement of service quality outpatient services from table 7.

Unknown value 5 largest negative gap on outpatient care amounted to -0.27 in V5. Attributes V5 is the statement "The speed in this service unit".

So suggestions on service quality improvement in ambulatory care are:

Services element in 'Speed in these service units' should be evaluated, improved and upgraded to conform to the expectations and needs of the patient.

In the questionnaire data processing inpatient services do the same steps as an outpatient.

2.12 Testing Systems

At this stage is a continuation of the implementation phase is to do tests on applications built. Testing of Customer Relationship Management information system has two stages of testing, namely alpha and beta testing.

2.12.1 Conclusion Alpha Testing

Based on the results of alpha testing (functional) is done it can be concluded that the application of customer relationship management information system that has been built is enough to walk properly and in accordance with the intent and purpose.

2.12.2 Conclusion Beta Testing

Based on interviews and questionnaires with the results of existing users can be concluded that the information system is in accordance with the objectives. Broadly speaking, this system is in conformity with each function is built in accordance with the intent and purpose.

3. CLOSING

3.1 Conclusion

Customer Relationship Management information systems Cicendo Eye Hospital has been built and tested the system so that it can be concluded that this information system can help public relations officer in recommending suggestions for improvement in ambulatory care and inpatient effective in accordance with the expectations and needs of the patient.

3.2 Suggestion

Customer Relationship Management information systems Cicendo Eye Hospital there is still a shortage and can be developed further with the development of the system user requirements specifications that must be met in achieving a higher stage and better system performance. The suggestions for further development that is expected to be able to improve the appearance of the presentation of the data services group conclusions outpatient or inpatient.

DAFTAR PUSTAKA

[1] Prihastono, Endro, "Pengukuran Kepuasan Konsumen pada Kualitas Pelayanan Customer Service Berbasis Web", DINAMIKA TEKNIK, Vol. VI, No.1 Hal 14-24, Januari 2012.

[2] F. Buttle, Customer Relationship Management, Malang: Bayumedia, 2007.

[3] Kadir, Abdul, Pengenalan Sistem Informasi, Yogyakarta: Andi, 2003.

[4] Sugiyono, Metode Penelitian Kombinasi (Mixed Methods), Bandung: Alfabeta, 2014.

[5] Parasuraman, A., Valarie A. Zeithaml, and Leonard L. Berry, Delivering Quality Service: Balancing Customer Perceptions and Expectations, New York: THE FREE PRESS, 1990.

[6] Rangkuti, Freddy, Measuring Customer Satisfaction, Jakarta: Gramedia Pustaka Utama, 2002.

[7] Rangkuti, Freddy, Analisis SWOT: Teknik Membedah Kasus Bisnis, Jakarta: Gramedia Pustaka Utama, 2015.

[8] Yuniar, S.S., Sugih Arijanto, Gita Permata Liansari, "Usulan Perbaikan Kualitas Pelayanan Jasa Pengiriman Paket Berdasarkan Hasil Pengukuran Menggunakan Metode Service Quality (Servqual) Di PT.X*" Jurnal Online Institut Teknologi Nasional, vol.2, no.2, pp.2338-5081, 2014.

[9] Pusat Data dan Statistik, Modul Pembelajaran SPSS (Statistical Package for the Social Sciences), Pendidikan Kementrian Pendidikan dan Kebudayaan Republik Indonesia, 2014.

[10] Sutabri, Tata, Analisa Sistem Informasi, Yogyakarta: Andi Offset, 2003.

[11] Lily Puspa Dewi, U. I. PEMODELAN PROSES BISNIS, Surabaya: Universitas Kristen Petra, 2010.

[12] Fathansyah, Basis Data, Bandung: Informatika, 2012.

[13] Pusat Data dan Statistik, Modul Pembelajaran SPSS (Statistical Package for the Social Sciences), Pendidikan Kementrian Pendidikan dan Kebudayaan Republik Indonesia, 2014.