

Utilization inpatient Services using Gap analysis based on Service Quality (Servqual) model in RUMKITAL

Dr. Oepomo Surabaya

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Abstract

Background: The Indonesian National Health Insurance System (BPJS) become one of great challenge for hospital management to attract customer's savor. Almost all hospital in Indonesia use this systems to cover hospitality charges. This situation lead the hospital to give the best services to the patients. RUMKITAL Dr. Oepomo, one of navy hospital in Surabaya, appointed as type D hospital based on Health Minister judgment No. HK. 02. 03/I/1961/2014 which serve The Indonesian National Health Insurance System (BPJS). Patient data in 2015 until 2017 showed inpatient rate only 0.5% - 2% compared to other hospital in Surabaya (10-15%).

Purpose: applies gap analysis of service quality (SERVQUAL) methods to assess the quality of inpatient services in RUMKITAL Dr. Oepomo.

Methods: A cross sectional study started from October 2017 - May 2018 in RUMKITAL Dr. Oepomo, Surabaya, Indonesia. Gap analysis were conducted to find the gap between hope with the perception of consumer's services. More over data were analyzed using SPSS 16.0

Result: 45 subjects enrolled this study. Customer's unsatisfied value (Normalized Raw Weight/NRW) of doctor services is 33.56 %, nurse 50.42%, admission 43.45%, laboratory 56.27 % and radiology 51.47%. Hospital management should take attention on laboratorium services because gap value were negative in all service attributes, radiology and laboratory services (4 attributes were negative), and doctor and admission services (2 attributes were negative).

Conclusion: Public services of inpatient instalation are less satisfactory from the point of view patient's needs so that variables with negative gap values need to be improved.

Keywords: QFD, BPJS, SERVQUAL

1. BACKGROUND

The Indonesian National Health Insurance System (BPJS) become one of great challenge for hospital management to attract customer's savor by improving service quality to meet the customer's demands of the community. Almost all hospital in Indonesia, whether privat or government hospital use this systems to cover hospitality charges. This situation lead the hospital to give the best services to the patients. RUMKITAL Dr. Oepomo, one of navy hospital in Surabaya, appointed as type D government hospital based on Health Minister judgment No. HK. 02. 03/I/1961/2014 which serves The Indonesian National Health Insurance System. Based on patient data in 2015 until 2017, we found inpatient only 0.5% - 2% compared to other hospital in Surabaya (10-15%).

Service quality (Servqual) is customer's perceptions and it is judged by them in person not by organizations. Service quality is the difference between customer expectation and perception received by the customer, known as gap (Kalaja,

Myshketa and Scalera, 2016). The gap study indicate a negative gap in all dimensions of health services (Sianturi and Singgih, 2011).

This study applies gap analysis of service quality (SERVQUAL) to assess the quality of inpatient services in RUMKITAL Dr. Oepomo, Surabaya, Indonesia.

2. METHODS

This study is a cross sectional, with inpatients as subjects. Gap analysis was utilised using quistionaire in order to capture and transform the customer's need of inpatients and hospital inpatient service by determined the patients' expectations of inpatient services and their priorities. Subjects choosen in this study are patients at least 2 days in inpatient Instalation Unit of RUMKITAL Dr. Oepomo, Surabaya, Indonesia. The relationships between the patient's expectations and service specifications.

2.1. SERVQUAL Measurement

The purpose of *SERVQUAL Measurement* to evaluate patients' satisfaction and expectations of service quality (Mohebifar *et al.*, 2016). Customer's assessment satisfaction determined by comparing customer's expectations with real performance of public services, called "gap". Processing *SERVQUAL* method measures five service quality dimensions which are:

1. **Tangibles:** - appearance of physical facilities, equipment, appearance of personnel and communication material.
2. **Reliability:** - ability to perform the promised service dependably and accurately.
3. **Responsiveness:** - willingness to help customers and provide prompt service.
4. **Assurance:** - knowledge and courtesy of employees and their ability to inspire trust and confidence.
5. **Empathy:** - caring, individualized attention the hospital provides to its patients.

2.2. Determine Gap analysis

Gap analysis were conducted to find the gap between hope with the perception of consumers about service. The results of the calculation can be used as a reference to whether there is a gap according Cohen Scale, means difficult improvement level.

Table 1. Unsatisfied values of respondent to inpatient services at RUMKITAL Dr. Oepomo Surabaya

Description	Expectation	Service	GAP	NRW (%)
Doctor visit according to schedule	3.7	3.16	-0.54	8.79%
Waiting time for doctor services.	3.64	3.22	-0.42	8.49%
Doctors are easily contacted by officers to deliver patient consultation	3.64	3.28	-0.36	8.33%
The doctor gives sufficient time to the patient and his family for consultation.	3.6	3.4	-0.2	7.95%
Unsatisfactory value (NRW) of Doctor's services		33.56%		
Nurses are quick and responsive in performing nursing actions to patients	3.7	3.26	-0.44	7.08%
The nursing room is clean and comfortable.	3.72	2.96	-0.76	7.84%
Nurse gives the patient and his/her family enough time to discuss patient care.	3.66	3.24	-0.42	7.05%

between expectations with the perception of the patient to the service in the Inpatient Instalation Unit Dr. Oepomo Surabaya.

The criteria for a gap between expectations and patients' perceptions of service are:

- If the gap is negative, then the patient's perception is still not satisfactory expectations of the patient, means that customer's services unable to meet the expectations of patients.
- If the gap value is zero, then the consumer perception is in accordance with customer's expectation
- If the value of the gap is positive, then the consumer's perception has exceeded expectations from consumers themselves (Sianturi and Singgih, 2011).

2.3. Statistical analysis

The data were analyse using SPSS 16.0 ver

3. RESULT

45 subjects enrolled in this study. Testing the validity and reliability of the data based on the results of the questionnaire data states that all variables are valid and reliable. *Improvement Value (IR)* those variables is 3.

Nurses respond to patient complaints	3.66	3.18	-0.48	7.18%
Nurses fulfill the needs of the patient including the nutritional needs and medicines given to the patient.	3.72	3.8	-0.08	6.11%
Nurse gives an explanation of the nursing action plan being performed to the patient	3.66	2.86	-0.8	7.99%
Nurses always pay attention to the patient's condition in performing nursing actions that will be done.	3.7	3.22	-0.48	7.17%
Unsatisfactory value (NRW) of Nurse's Services		50.42%		
The admission staff is always there 24 hours in the admissions room.	3.62	3.1	-0.52	11.07%
Waiting time to do the administration	3.68	3.22	-0.46	10.84%
Skill of admission officers in performing the patient administration process	3.68	3.1	-0.58	11.26%

The admissions officer gives sufficient time to the patient and his family to communicate in the inpatient administration	3.68	3.28	-0.4	10.64%
Unsatisfactory value (NRW) of Admission Services		43.45%		
Laboratory officers deliver the results on time	3.7	3.3	-0.4	8.14%
Waiting time for laboratory results	3.8	3.28	-0.52	8.41%
Clothes of laboratory personnel are neat, clean and wear ID	3.78	3.28	-0.5	8.36%
Laboratory personnel are skilled in conducting sampling in patients	3.72	3.26	-0.46	8.28%
The laboratory officer give an explanation of the sampling action plan that was performed to the patient.	3.66	3.1	-0.56	8.57%
Laboratory personnel always pay attention to the patient's condition in doing sampling to the patient.	3.7	3.24	-0.46	8.29%
Unsatisfactory value (NRW) of Laboratory Services		56.27 %		
The radiologist submits the results on time	3.68	3.32	-0.36	6.22%

3.1. Gap Analysis

The study showed not all aspects had negative gap value, means that there is more consumer

Waiting time radiology result	3.68	3.24	-0.44	6.37%
The radiology location guide are quite clear	3.64	3.22	-0.42	6.34%
The radiology examination room is clean and comfortable	3.74	3.18	-0.56	6.60%
The radiologist's clothes are neat, clean and wearing identification.	3.68	3.18	-0.5	6.49%
The radiology officer provides an explanation of the action plan by operating or using radiological equipment to the patient.	3.7	3.2	-0.5	6.48%
The radiology examination room is clean and comfortable	3.74	3.18	-0.56	6.60%
Officers provide guidance on the examination or action to be taken including its usefulness and its side effects.	3.7	3.26	-0.44	6.37%
Unsatisfactory value (NRW) of Radiology Services		51.47%		

expectations than their own perceptions and vice versa, where consumers' perceptions outweigh their expectations (Sianturi and Singgih, 2011).

Table 2: Gap value in five attribute of inpatient services

	Tangia-ble	Reliabi- lity	Responsi- veness	Assura- nce	Empat hy
Doctor	-0.330	-0.020	0.070	0.020	0.130
Nurse	-0.295	-0.160	-0.280	-0.360	-0.230
Admission	-0.195	-0.440	0.040	0.000	0.000
Laboratory	-0.506	-0.133	-0.230	0.040	-0.190
Radiology	-0.356	0.06	-0.220	-0.200	-0.210

Table 3: Customer`s need of doctor services and Gap value of inpatients in RUMKITAL Dr. Oepomo Surabaya

Description	IC	Ser	GAP	NRW (%)
Doctor visit according to schedule	3.7	3.16	-0.54	8.79%
Waiting time for doctor services.	3.64	3.22	-0.42	8.49%
Doctors are easily contacted by officers to deliver patient consultation	3.64	3.28	-0.36	8.33%
Doctor's clothes are clean and tidy, using a doctor's coat, wearing an ID.	3.653	3.66	0.007	7.49%
Average Tangiable	3.658	3.33	-0.33	Sig 0.693 2-tailed 0.069
Doctor able to determine the diagnosis of the disease appropriately	3.76	3.84	0.08	7.35%
Doctor respects the rights and opinions of patients in determining the treatment process to be performed on the patient	3.6	3.72	0.12	7.27%
The doctor gives sufficient time to the patient and his family for consultation.	3.6	3.4	-0.2	7.95%
Doctors perform careful examination to determine the patient's illness.	3.68	3.7	0.02	7.47%
Average Reliability	3.66	3.665	0.005	Sig 0.284 2-tailed 0.949
Doctor asks the patient for approval of the medical action to be performed on the patient.	3.62	3.64	0.02	7.47%
Doctor respects the rights and opinions of patients in determining the treatment process to be performed on the patient	3.6	3.72	0.12	7.27%
Average Responsiveness	3.61	3.68	0.07	Sig 0.000 2-tailed 0.395
Doctor provides guidance on the treatment plan or action to be performed on the patient including the objectives and risks	3.7	3.7	0	7.51%
The doctor takes note of the safety of the treatment performed on the patient.	3.72	3.76	0,04	7.43%
Average Assurance	3.71	3.73	0.02	Sig 0.000 2-tailed 0.500
The doctor informs the patient's illness to the patient and the other person whom the patient wants.	3.54	3.66	0.12	7.26%
Doctors are friendly and polite in behaving.	3.64	3.8	0.16	7.19%
Average Empathy	3.59	3.73	0.13	Sig 0.0002- tailed 0.090
Total				100%

Note : IC = importance to customer (expectation); Ser = Service accepted by customer; NRW = Normalized Raw Weight;

If Sig value <0.05 → there is correlation between expectation and service

If 2-tailed value > 0.05 means expectation and service is differs markedly

Doctor services able to meet patient's expectation or slight above on responsiveness (0.07), assurance (0.02) and empathy (0.13), but not in tangible (-0.33) and reliability (-0.02). The unsatisfied customers of doctor services (NRW %) are 33.56%. Responsiveness, assurance and empathy are the dimension where patient's satisfaction is higher comparing with two other dimensions on the doctor's services.

Table 4. Customer's Needs of nurse services and GAP value of inpatients in RUMKITAL Dr. Oepomo Surabaya

Description	IC	Ser	GAP	NRW
Nurse is ready before the doctor visits begins.	3.66	3.68	0.02	6,21%
Nurses are quick and responsive in performing nursing actions to patients	3.7	3.26	-0.44	7.08%
The nursing room is clean and comfortable.	3.72	2.96	-0.76	7.84%
Appearance of nurse clothes are neat and clean, wearing identification.	3.68	3.68	0	6.24%
Average of Tangiable	3.69	3.395	-0.295	Sig 0.051 2-tailed 0.214
Nurses are able to perform nursing actions when needed.	3.74	3.74	0	6.24%
Nurse respects the rights and opinions of the patient in determining the treatment process to be performed on the patient	3.66	3.7	0,04	6.17%
Nurse gives the patient and his/her family enough time to discuss patient care.	3.66	3.24	-0.42	7,05%
Friendliness and nurse politeness in behaving.	3.72	3.72	0	6,24%
Skilled nurses perform nursing actions.	3.7	3.76	0,06	6,14%
verage Reliability	3.696	3.632	-0.16	Sig 0.28 2-tailed 0.515
Nurses respond to patient complaints	3.66	3.18	-0.48	7.18%

Nurses fulfill the needs of the patient including the nutritional needs and medicines given to the patient.	3.72	3.8	-0.08	6.11%
Average Responsiveness	3.69	3.49	-0.28	Sig 0.000 2-tailed 0.605
Nurse gives an explanation of the nursing action plan being performed to the patient	3.66	2.86	-0.8	7.99%
Nurse maintains the safety of nursing actions performed on the patient	3.74	3.82	0.08	6.11%
Average Assurance	3.7	3.34	-0.36	Sig 0.000 2-tailed 0.563

Nursing services unable to meet patient's expectation in all aspects: tangible (-0.295), reliability (-0.16), responsiveness (-0.28), assurance (-0.36) and empathy (0.13), but not in tangible

Table 5. Customer's Needs of admission officer services and GAP value of inpatients in RUMKITAL Dr. Oepomo Surabaya

Description	IC	Ser	GAP	NRW
The admission staff is always there 24 hours in the admissions room.	3.62	3.1	-0.52	11.07%
Waiting time to do the administration	3.68	3.22	-0.46	10.84%
The Admission staff clothing is neat and clean, wearing ID.	3.74	3.88	0.14	9.14%
The reception area is clean and comfortable.	3.7	3.76	0.06	9.33%
Average of Tangible	3.685	3.49	-0.195	Sig 0.101 2-tailed 0.338
Skill of admission officers in performing the patient administration process	3.68	3.1	-0.58	11,26%
The admissions officer gives sufficient time to the patient and his family to communicate in the inpatient administration	3.68	3.28	-0.4	10.64%
Average Reliability	3.68	3.19	-0.44	Sig 0.000 2-tailed 0.116

Admission services are able to meet customer's expectation on assurances and empathy, light above customer's expectation on responsiveness (0.04). But tangible (-0.195) and

Nurses always pay attention to the patient's condition in performing nursing actions that will be done.	3.7	3.22	-0.48	7.17%
Nurse maintains the confidentiality of the patient's illness	3.7	3.72	0,02	6.21%
Average Empathy	3.7	3.47	-0.23	Sig 0.000 2-tailed 0.527
Total				100.00%

Note : IC = importance to customer (expectation); Ser = Service accepted by customer; NRW = Normalized Raw Weight;
If Sig value <0.05 → there is correlation between expectation and service
If 2-tailed value > 0.05 means expectation and service is differs markedly

(-0.33) and empathy (-0.23). The unsatisfied customers of doctor services (NRW %) are 50.42 % in all aspect.

The admission staff is friendly and courteous	3.76	3.76	0	9.48%
The admissions officer respects the rights and opinions of the patient in determining the inpatient administration process.	3.74	3.82	0,08	9.28%
Average Responsiveness	3.75	3.79	0.04	Sig 0.000 2-tailed 0.500
The admissions officer gives an explanation of the inpatient's room.	3.72	3.72	0	9.48%
Average Assurance	3.72	3.72	0	Sig – 2-tailed 9.48%
The admittance counter is pretty clear.	3.64	3.64	0	
Average Empathy	3.64	3.64	0	Sig – 2-tailed
Total				100,00%

Note : IC = importance to customer (expectation); Ser = Service accepted by customer; NRW = Normalized Raw Weight;
If Sig value <0.05 → there is correlation between expectation and service
If 2-tailed value > 0.05 means expectation and service is differs markedly

reliability (-0.44) can not meet the customer's expectations, with total unsatisfied value (NRW) 43.61 on all aspect of admission services.

Table 6. Customer`s Needs of Laboratorium services and GAP value of inpatients in RUMKITAL Dr. Oepomo Surabaya

Description	IC	Ser	GAP	NRW
Laboratory officers deliver the results on time	3.7	3.3	-0.4	8.14%
Waiting time for laboratory results	3.8	3.28	-0.52	8.41%
Clothes of laboratory personnel are neat, clean and wear ID	3.78	3.28	-0.5	8.36%
Average of Tangiable	3.72	3.587	-0.506	Sig 9.332-tailed 0.502
Laboratory personnel are quick and responsive in taking samples to patients	3.78	3.78	0	7.26%
Laboratory personnel are skilled in conducting sampling in patients	3.72	3.26	-0.46	8.28%
Laboratory test results can be trusted.	3.66	3.72	0.06	7.14%
Average Reliability	3.68	3.45	-0.133	Sig 0.0002-tailed 0.612
The officer gives sufficient time to the patient and family to communicate.	3.7	3.8	0.1	7.07%
The laboratory officer give an explanation of the sampling action plan that was performed to the patient.	3.66	3.1	-0.56	8.57%
Average Responsiveness	3.74	3.78	-0.23	Sig 0.0002-tailed

Laboratory services are able to meet customer`s expectation in assurance (0.04), but other aspects are not (tangible -0.506; reliability -

Table 7. Customer`s Needs of Radiology services and GAP value of inpatients in RUMKITAL Dr. Oepomo Surabaya

Description	IC	Ser	GAP	NRW
The radiologist submits the results on time	3.68	3.32	-0.36	6.22%
Waiting time radiology result	3.68	3.24	-0.44	6.37%
The radiology location guide are quite clear	3.64	3.22	-0.42	6.34%
Radiology checkout room is clean and comfortable	3.64	3.64	0	5.61%
The radiology examination room is clean and comfortable	3.74	3.18	-0.56	6.60%
Average of Tangiable	3.72	3.784	-0.356	Sig 0.0132-tailed 0.001

				0.500
Laboratory personnel maintain the safety of sampling performed on the patient	3.74	3.82	0.08	7.10%
Laboratory personnel maintain the confidentiality of patient examination results	3.74	3.74	0	7.26%
Average Assurance	3.71	3.52	0.04	Sig 0.0002-tailed 0.610
Laboratory officials respect the rights and opinions of patients in sampling to be performed on the patient	3.72	3.8	0.08	7.10%
Laboratory personnel always pay attention to the patient's condition in doing sampling to the patient.	3.7	3.24	-0.46	8.29%
Average Empathy	3.676	3.32	-0.19	Sig 3.322-tailed 0.020
Total				100.00%

Note : IC = importance to customer (expectation); Ser = Service accepted by customer; NRW = Normalized Raw Weight;
If Sig value <0.05 → there is correlation between expectation and service
If 2-tailed value > 0.05 means expectation and service is differs markedly

0.133; responsiveness -0.23; and empathy -0.19) with unsatisfied value (NRW) 56.27 % in all aspects.

The radiology officer is skilled in operating or using radiological equipment	3.78	3.84	0.06	5.52%
Laboratory personnel are quick and responsive in operating or using radiological equipment.	3.76	3.82	0.06	5.52%
The radiology officer respects the rights and opinions of the patient in determining the examination process to be performed on the patient.	3.66	3.7	0.04	5.55%
The radiologist gives the patient and family enough time to communicate.	3.7	3.78	0.08	5.49%
Friendliness and courtesy of	3.7	3.78	0.08	5.49%

radiology officers in behaving.				
Average Reliability	3.72	3.5	0.06	Sig 0.000 2-tailed 0.576
The radiologist's clothes are neat, clean and wearing identification.	3.68	3.18	-0.5	6.49%
The radiologist always pays attention to the patient's condition in operating or using radiology equipment to the patient	3.76	3.82	0.06	5.52%
Average Responsiveness	3.72	3.5	-0.22	Sig 0.000 2-tailed 0.576
The radiology officer provides an explanation of the action plan by operating or using radiological equipment to the patient.	3.7	3.2	-0.5	6.48%
Radiological examination results can be trusted.	3.68	3.78	0.1	5.46%
Average Assurance	3.69	3.49	-0.2	Sig 000 2-tailed 0.626
The radiology examination room is	3.74	3.18	-0.56	6.60%

Radiology services exceed customer's expectation in reliability (0.04), but other aspects are not (tangible -0.356; responsiveness -0.22; assurance -

4. DISCUSSION

The SERVQUAL scale based on a marketing perspective (Parasuraman, Zeithaml and Berry, 1985) to provide an instrument for measuring service quality that would apply across a broad range of services with minor modifications in the scale. SERVQUAL provides a foundation for a growing body of research that pertains to the creation of quality among service industries (Babakus and Mangold, 1992). Quality defined as the totality of features and attributes of a service that bear on its ability to satisfy a given need (Bauer, Duffy and Westcott, 2002). Service quality is expressed as a function of consumer expectations of service compared with their perceptions of the actual service (Chakravarty, 2011).

Fan *et al.* (2017) states that satisfaction as psychological concept which is defined in different ways. Satisfaction is a cognitive response whereas some others consider satisfaction as emotional attachment of individuals. That's why only

clean and comfortable				
Officers provide guidance on the examination or action to be taken including its usefulness and its side effects.	3.7	3.26	-0.44	6.37%
The radiologist maintains the safety of radiological measures performed on the patient.	3.74	3.78	0.04	5.55%
The radiologist maintains the confidentiality of the patient's examination.	3.7	3.82	0.12	5.43%
Average Empathy	3.72	3.51	-0.21	Sig 0.897 2-tailed 0.305
Total				100.00%

Note : IC = importance to customer (expectation); Ser = Service accepted by customer; NRW = Normalized Raw Weight;
If Sig value <0.05 → there is correlation between expectation and service
If 2-tailed value > 0.05 means expectation and service is differs markedly

0.2; and empathy -0.21) with unsatisfied value (NRW) 51.47 % in all aspect.

consumer's perceptions is needed to evaluate service quality (Churcill and Gilbert, 1987).

Gap value describes the satisfactory to the services received by consunen, whereas established by gap between services recieved with the desired expectations of customers. If gap value positive means the customer is satisfied, whereas if the negative value means the customer is not satisfied. Gap analysis is aimed to know the factors that must be prioritized.

Study conducted by Rostami, Jahani and Mahmoudi (2018) showed that the most expectation of hospital services quality was related to reliability dimension, while the lowest perception was about responsiveness aspect, while the other study (Chakravarty, 2011) conducted outpatient service showed gap value in all five dimension were negative, means that the performance of Hospital services have not met the expectation of the respondents, in other words,

expectations are still greater than the actual performance.

4.1. Management

In order to improve the quality of inpatient services, hospital management must take attention on laboratorum services because gap value were negative in all service attributes, followed by radiology and laboratory services (4 attributes were

negative), and doctor and admission services (2 attributes were negative). Padma, Rajendran and Sai Lokachari (2010) states that the hospital service providers have to understand the needs of both patients and attendants in order to gather a holistic view of their services.

There are several aspects need manament improving we suggested were showed at table 8.

Table 8. Hospital Service Improvement

Description	Suggested Improvement
Doctor visit according to schedule	Addition expert medical personnel in every inpatient service unit
Waiting time for doctor services.	Scheduling on doctor's meeting via phone
The doctor gives sufficient time to the patient and his family for consultation.	Arranging consultation session
Doctors are easily contacted by officers to deliver patient consultation	Arranging consultation session
Nurses are quick and responsive in performing nursing actions to patients	Improving nurse's skills through medical training
Nurses always pay attention to the patient's condition in performing nursing actions that will be done.	Improving nurse's skills on patient's care training
Nurses respond to patient complaints	Improve communication skills of nurses
The nursing room is clean and comfortable.	Conduct periodic inspection and maintenance of facilities
Nurse gives an explanation of the nursing action plan being performed to the patient	Improve communication skills of nurses
Nurses fulfill the needs of the patient including the nutritional needs and medicines given to the patient	Addition Nurse's personnel
Nurse gives the patient and his/her family enough time to discuss patient care.	Arranging consultation session between nurse and patient
The admission staff is always there 24 hours in the admissions room.	Divide the working hours into 3 shifts (each shift for 8 hour) for admission officers.
Waiting time to do the administration	Improving admission officer's skills with administration training
skill of admission officers in performing the patient administration process	Improving admission officer's skills with administration training
The admissions officer gives	Addition customer service

5. CONCLUSION

Public services of inpatient instalation are less satisfactory from the point of view patient's needs so that variables with negative gap values need to

sufficient time to the patient and his family to communicate in the inpatient administration	to give sufficient explanation to patient
Laboratory officers deliver the results on time	- Addition laboratory personnel - Arrange schedule on laboratory result's delivery
Waiting time for laboratory results	Arrange schedule on laboratory result's delivery
Laboratory personnel are skilled in conducting sampling in patients	Improving laboratory officer's skills conducting sampling in patients
Clothes of laboratory worker are neat, clean and wear ID	Laboratory personel using uniform, tidy, clean and wearing ID
Laboratory personnel always pay attention to the patient's condition in doing sampling to the patient.	Improve communication skills of laboratory officers
The laboratory officer gave an explanation of the sampling action plan that was performed to the patient	Improve communication skills of laboratory officers
The radiologist submits the results on time	- Addition radiology personnel - Arrange schedule on radiology result's delivery
Waiting time radiology result	Arrange schedule on laboratory result's delivery
The radiologist's clothes are neat, clean and wearing identification.	Radiology personel using uniform, tidy, clean and wearing ID
The radiology officer provides an explanation of the action plan by operating or using radiological equipment to the patient.	Improve communication skills of Radiology officers
The radiology examination room is clean and comfortable	Conduct periodic inspection and maintenance of facilities
Officers provide guidance on the examination or action to be taken including its usefulness and its side effects.	Improve communication skills of Radiology officers
The radiology location guide are quite clear	Set brief guidance of radiology

be improved, including doctor services, nurses services, admission officers, laboratory services and radiology services.

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