

Improving Hospital Service Quality of Emergency Department in Pandemic Era: Implementing Integration of Quality Function Deployment (QFD) and Logical Framework Analysis (LFA)

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ABSTRACT

The world is currently facing new challenges with the emergence of COVID-19; during this pandemic, several reports have shown a decrease in the number of visits to health services, the emergency department must be able to develop a design program to improve the quality during the pandemic. This study has aimed to build a quality improvement framework in the emergency department in the pandemic era by implementing Quality Function Deployment (QFD) and Logical Framework Analysis (LFA). This study uses a Mix Method by applying the QFD method, which identifies and analyzes challenges and applies the priorities of the QFD results using LFA to develop a plan. and implementation programs. Analysis of QFD 5 service aspects and 12 technical management responses shows priority from the highest to the lowest for emergency services during a pandemic; based on the results of these priorities, a framework was developed using LFA and obtained a program with goals, objectives, 4 outputs and 12 activities that have indicators and implementation plan. The Conclusion of this research is the integration of quality functions and logical framework analysis is an effective method to identify and analyze challenges from a patient perspective and develop a quality improvement framework, especially in the pandemic era.



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1. INTRODUCTION

The world is currently facing new challenges with a disaster in the form of a pandemic caused by the COVID-19 outbreak, which disrupts various aspects and fields globally [4]. Especially in the health sector, where the current pandemic conditions require health facilities to increase their response to the community's medical services, which are very high [20]. In several reports, there was a decrease in the number of visits to health services, especially in primary medical services and there was an increase in the number of patients with diseases such as heart disease, stroke, and other acute illnesses who were worsening due to fear of coming to health care facilities during a pandemic [3].

According to the Indonesian Ministry of Health, the impact of the COVID-19 pandemic on the decline patient visits that occurred in health care facilities was due to the changing flow of the service process, restrictions on the number of patients in health facilities, and the implementation of complex preventive measures and health protocols that affected patient care. especially for patients who need urgent care (Indonesia KKR, 2020).

Improving the quality of a health care facility during a pandemic requires a fast and dynamic approach where protocol development and implementation changes in hospitals are needed to maintain and improve service quality in disaster conditions such as pandemics [17].

The use of Quality Function Deployment in health care facilities requires an in-depth study of clinical and management aspects in identifying and prioritizing core quality parameters. To avoid conflicts in determining quality parameters between clinical and managerial fields, different approaches are needed to benefit the patient's interests [2].

Logical Framework Analysis is a methodology in strategic planning and effective project management, as an integrated package of instruments used to identify, analyze and solve problems in planning, as well as to design and manage solutions to these problems with a stakeholder participation framework [6].

Integration using these two approaches can be considered part of CQI and TQM, which are currently being used to improve health services by several researchers in health care facilities [19], Quality Function Deployment identifies, analyzes problems and challenges. In health services, then Logical Framework Analysis helps develop plans to improve service quality [5].

Therefore, this research focuses on developing the planning and implementation of Total Quality Management and Continuous Quality Improvement in hospitals by integrating using Quality Function Deployment with Logical Framework Analysis in identifying and analyzing the challenges faced by hospitals which are then planned and implemented to improve the quality of service in a pandemic. The purpose of this study is to discuss how health services can improve their quality in the pandemic era by implementing the integration of Quality Function Deployment and Logical Framework Analysis. to provide information for potential organizations to manage.

2. METHODOLOGY

This research is mixed-method, collaborative research using quantitative and qualitative approaches used in different periods. Qualitative methods are used to process the results of interviews and analysis, and quantitative methods are used to process gaps and planning matrix [7].

The number of respondents obtained from this study was 212 respondents; responses were outpatients and patients who had received services at the emergency department (ED) PKU Bantul from October to November 2021.

The instruments used in this study were: 1. The questionnaire was used to identify the level of importance and the level of patient perception of the services and resources of the PKU Muhammadiyah Bantul Emergency Unit during the pandemic. 2. Interviews with hospital stakeholders to determine the response to be carried out in connection with the questionnaire results above. Interview questions for respondents include suggestions, criticisms, and reasons for the answers to the questionnaires filled out by respondents. This is done to capture the needs of stakeholders as clearly as possible and to capture the unbiased views of

participants' service.

Preliminary study was conducted in this study to develop a suitable questionnaire by modify the questionnaires on the previous studies adopting from COVID-19 guidelines and strategies from Kemenkes and WHO, observation on the field and interviews from the patients to build an accurate and related questionnaire to emergency unit services on this pandemic condition.

Test the validity and reliability based on the Pearson correlation; it is known that the value of the items in the questionnaire is greater than 0.632, so the items can be said to be valid. Based on the reliability statistics and total item statistics, it can be concluded that the 15 questions on the questionnaire are considered reliable.

3. FINDINGS AND DISCUSSION

3.1 Characteristics of Respondents

The number of respondents obtained from this study was 212 respondents, respondents were outpatients and in patients who had received services at the PKU Bantul ED from October to November 2021; based on these respondents, several general characteristics were assessed, such as age, gender, education level, and patient work.

Based on the study obtained from 212 respondents, the age of respondents <25 years were 33 respondents, 25-35 years were 35 respondents, 36-45 years were 36 respondents, 46-65 years were 80 respondents, >65 years were 28 respondents. The gender of male respondents obtained as many as 108 respondents and women as many as 102 respondents. The education level of the respondents of the research subjects was obtained, as many as 49 respondents for elementary school, 42 respondents for junior high school, 81 respondents for SMA/SMK, 6 respondents for D3 and 34 respondents for bachelor degree. Private workers obtained the work of the research subjects as many as 48 respondents, labors as many as 44 respondents, housewives as many as 38 respondents, farmers as 18 respondents, as well as other jobs which each amounted to less than 10 respondents such as village officials, state civil servants, traders, students., teachers, traders, and not working as many as 24 respondents.

3.2 Voice of Customer

3.2.1 Service Attribute Arrangement

The preparation of service attributes is carried out by conducting a preliminary study related to service attributes that need to be studied and become a focus on improving service quality in the emergency department of PKU Bantul Hospital in the pandemic era.

The preliminary study was conducted in the form of a survey that was sourced based on attributes in previous research, guidelines for COVID-19 services by the Ministry of Health, as well as interviews of patients receiving services at the PKU Bantul ED, this survey was conducted to obtain what attributes are of concern to patients when receiving services.

Based on the results of the survey, there were 15 service attributes that needed to be studied and considered necessary by patients, especially in pandemic conditions.

3.2.2 Level of Importance

The level of importance is part of the Voice of Customer, which is used in assessing service attributes that are considered necessary by patients who have received services in the ER before, an assessment with a Likert

scale with a value of 1 to 5, the higher the value, the more important the service is considered by the patient.

Based on the level of importance in the voice of the customer in this study, it has a high value in every aspect of service which shows that these service aspects are considered important and highly expected by patients when receiving services in the ED.

3.2.3 Level of Satisfaction

The level of importance is part of the Voice of Customer which is used in assessing satisfaction or suitability of service attributes with those received by patients who have received services in the previous ED, an assessment with a Likert scale with a value of 1 to 5, the higher the value, the more appropriate the service received by the patient. Based on the voice of customers in this study, it was found that the level of satisfaction was above a value of 4 which showed that patients who received services in the ED were satisfied with the services provided.

3.2.4 The gap between importance and satisfaction

Voice of Customer which consists of the level of importance and level of satisfaction then needs to be analyzed to find out the gaps or gaps, gap or gap analysis needs to be done to see both the problem and potential of the service, so as to get a picture of the service that requires improvement or service improvement.

No.	Service Attribute	Level of Importance	Level of Satisfaction	GAP
1.	Doctors and nurses are always ready and present when patients are needed.	4,6113744	4,424528	0,186846
2.	The doctor provides clear information about the patient's illness.	4,535545	4,400943	0,162904
3.	Patient waiting time for service	4,28436	3,995283	0,289077
4.	Feelings of security and trust in the service provided by doctors and nurses	4,597156	4,481132	0,116024
5.	Speed of decision-making of patient governance and follow-up plans	4,488152	4,320755	0,167397
6.	The nurse gives a clear explanation when going to action.	4,521327	4,443396	0,077931
7.	The nurse's skills in performing nursing actions.	4,478673	4,396226	0,082447
8.	The procedure of service flow in the Emergency Department installation is not complicated.	4,492891	4,400943	0,091948
9.	Quick and easy patient administration	4,50237	4,320755	0,181615
10.	Accuracy of COVID and Non-COVID patient screening flow	4,459716	4,311321	0,148395
11.	Implementation of health protocols in IGD and the use of appropriate and complete personal protective equipment	4,578199	4,523585	0,054614
12.	Completeness of hospital facilities	4,616114	4,471698	0,144416
13.	Readiness of hospital facilities	4,578199	4,448113	0,130086
14.	Cleanliness of the room and the tools of IGD Hospital facilities	4,540284	4,415094	0,12519
15.	Adequate availability of beds in IGD	4,488152	4,391509	0,096642

Based on the gap analysis data, it was found that although the level of interest and satisfaction of patients receiving services in the ER is high, there are gaps or gaps that indicate that there are services that can be improved or improved with the aim of providing better services.

3.3 Voice of Expert

In defining the potential and response of the hospital in improving services, especially the response to the attributes of each service aspect in the PKU Bantul ER, data collection is carried out from experts or hospital stakeholders. Voice of Experts can be taken using interviews or group discussions. In this study, the Voice of Experts was taken using interviews with stakeholders related to the Emergency department, namely 1.) Director of Services at PKU Bantul Hospital, 2.) Manager of ED at PKU Bantul and 3.) bedroom of ED PKU Bantul Hospital. In collecting the Voice of Experts in this study, through an interview process, interviews were conducted regarding the impact of the pandemic on the PKU Bantul ER, the presentation of service attributes and the results of the Voice of Customer as well as the gaps in the level of importance and patient satisfaction with services at the PKU Bantul ED.

No.	Service Aspect	Voice of Expert
1.	Medical Services	Optimizing the implementation of patient waiting time standards
		Evaluation of the competence and performance of doctors and nurses
		Providing access to a tiered and collaborative patient complaint flow
		Adding a security guard as an emergency room officer and patient information
2.	Nursing Services	Optimizing the implementation of educational evidence
		Capacity building and training of nurses
3.	Administration	Optimization of admin functions in IGD
		Evaluation of SIMRS & E-MR usage
4.	Infection Prevention and Control	Socialization and tightening of special triage flow for personnel
		The use of risk barcodes on incoming patients
5.	Support Services	Periodic registration and evaluation of ER equipment
		Periodic and scheduled on-call cleaning

Based on the results of the analysis from the QFD team, 12 specific technical response recommendations were obtained and included the technical responses of the stakeholders which would then be used in compiling the House of Quality matrix.

3.4 House of Quality Matrix

House of quality is a matrix used in QFD which is useful as a liaison or translator that bridges between Voice of Customer and Voice of Expert,

House of Quality was formed through analysis between Voice of Customer and Voice of Expert, in House of Quality analysis research was carried out by researchers with the Quality Function Deployment team, totaling 3 IGD PKU Bantul personnel consisting of general practitioners, nurses and admins. The QFD team was

formed on the basis of reducing analytical bias and getting a broad perspective and analysis results that are in accordance with the PKU Bantul ER environment.

3.4.1 Correlation between Voice of Customer and Voice of Expert

In formulating between the patient's perspective and the response by management, it is necessary to know the relationship between the service attribute and the technical response, the relationship between the attribute and the technical response shows the influence between the response and the attribute.

The correlation value of the attribute with the technical response is represented by the symbol:

- : Very strong relationships
- : Strong relationships
- ▽ : Weak relationships

The value of each symbol is used in calculating the planning matrix.

Voice of Customer	Voice of Expert	Optimizing the implementation of patient waiting time standards	Evaluation of the competence and performance of doctor and nurses	Providing access to a fast and collaborative patient complaint flow	Adding a security guard in an emergency room and an ambulance	Optimizing the implementation of educational evidence	Capacity building and training of nurses	Optimization of admin functions in IOD	Evaluation of SIMARS & EMAR usage	Standardization and highlighting of special target flow for personnel	The use of risk barcodes on incoming patients	Periodic regulation and evaluation of ER equipment	Periodic and scheduled on-call cleaning
Doctors and nurses are always ready and present when patients are needed.		●	●	○									
The doctor provides clear information about the patient's illness.				○		●							
Patient waiting time for service		●		○	○		●		●	○	●		
Feelings of security and trust in the service provided by doctors and nurses		○	●	▽			●			●			
Speed of decision-making of patient governance and follow-up plans			●										
The nurse gives a clear explanation when going to action.			●			●							
The nurse's skills in performing nursing actions.			●			●	●			●			
The procedure of service flow in the Emergency Department installation is not complicated.					●			●	●	●	○		
Quick and easy patient administration					○			●	●				
Accuracy of COVID and Non-COVID patient screening flow					●					●	●		
Implementation of health protocols in IOD and the use of appropriate and complete personal protective equipment										●	●		
Completeness of hospital facilities												●	
Readiness of hospital facilities												●	
Cleanliness of the room and the tools of IOD Hospital facilities				○									●
Adequate availability of beds in IOD		○										●	

3.4.2 Correlation between Voice of Expert

Each technical response or Voice expert is then determined to determine the correlation to determine the relationship between the technical response and other responses. The correlation can show positive results if the technical response has good and related potential for reciprocity, while the correlation can show a negative value if between technical responses have negative feedback

The value of the strength of the correlation between technical responses is represented in the form of symbols, as follows:

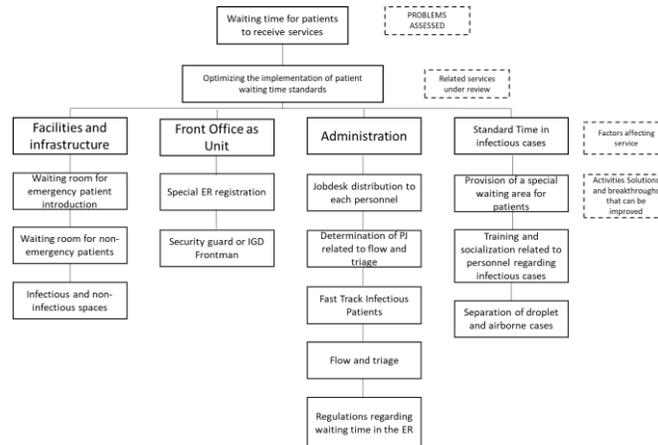
- ⊙ : Positive relationships are very strong.
- : Positive relationships are strong enough
- : Negative relationships are strong
- △ : Negative relationships are very strong.

recommendations with the highest weight values, namely:

- Service Aspect: Patient waiting time in getting service
- Recommendation: Optimizing the implementation of patient waiting time standards

Step 3: Objective Tree Development

Based on the service aspects and problems that have been studied in the Problem Tree, the problems and service aspects that will be focused on are developed in the Objective Tree.



In this study, the service aspect that was studied was the medical service aspect related to patient waiting time in getting services at the PKU Bantul ER, based on this problem, it was then developed for outputs and activities based on what service factors were influential and the activities that could be carried out either by management, personnel and related divisions in improving these services.

Step 4: Logical Matrix (LOGFRAME)

The results of the Frame Objective tree development are then arranged in a LOGFRAME matrix, the Logical Framework Matrix is a matrix used to determine the achievement of a program.

The LOGFRAME Matrix consists of Goals, Purposes, Outputs, Activities which are the results of the Objective Tree as well as Indicators, Means of verification, and Assumptions of each structure of a program.

	Indicator	Mean of Verification	Asumption	
Goal : Waiting time for patients to receive services	The level of patient satisfaction criteria for emergency and non-emergency patients is above 80%	Patient satisfaction survey sheet	Patients get faster waiting times	
Purpose : Optimizing the implementation of patient waiting time standards	The total amount of patient waiting time while in the ED decreased by 20%	The time the patient enters until he leaves in the medical record	Better waiting time standards	
Outputs :	<ul style="list-style-type: none"> • Addition of Facilities and Infrastructure • Front Office as Unit • Emergency department administration and regulation • Standard Time in infectious cases 	<ul style="list-style-type: none"> • Patient waiting time in infectious cases decreases • With additional personnel or jobdesk • Better SOPs and Regulations 	<ul style="list-style-type: none"> • Medical record service time • Attendance sheet or front office contract signature • Number of SOPs and regulations issued 	<ul style="list-style-type: none"> • Faster waiting time in infectious cases • Make It easier for patients to get faster service • Simplify flow and triage
Activities :	<ul style="list-style-type: none"> • Procurement of waiting rooms for emergency and non-emergency patients • Modification of infectious and non-infectious spaces • Special ER registration • IGD security guard or frontman • Jobdesk distribution to each personnel • Determination of PJ related to flow and triage • Fast Track Infectious Patients • Socialization related to special Triage and Triage Flow/Provision of a special waiting area for patients • Training and socialization related to personnel regarding infectious cases • Separation of droplet and airborne cases • Regulations regarding waiting time in the ER 	<ul style="list-style-type: none"> • Activities are scheduled and budgeted in the work program 	<ul style="list-style-type: none"> • List of IGD Activities and Work Programs • SOP sheet and published flow • ER submission and procurement sheet 	<ul style="list-style-type: none"> • Activities can be carried out according to schedule

LOGFRAME was compiled using the results of the objective tree in this study and then arranged for its target, namely the waiting time for patients to receive services, with the aim of optimizing the application of patient waiting time standards, then for outputs related to services that can be improved there are 4 outputs, namely related to infrastructure, human resources, Administration and regulation, as well as standard time of service in infectious cases. In the activity, there were 12 activities carried out to improve the quality of the output.

Then made each indicator as a target that must be achieved to determine the program is effective and determine the evidence that shows these indicators and determine assumptions or expectations at each point if the indicators are met.

Step 5: Implementation Planning

After the design and indicators of the program have been prepared, an implementation plan is determined that will be used in implementing the program at the Emergency Room of PKU Bantul.

There are several steps that need to be taken in implementing the design so that it can be applied to the emergency room service at PKU Bantul Hospital:

The design of the quality improvement program is submitted through the head of the room, head of installation, ER manager, and director of service.

1. For the quality improvement program, registration of the program design is carried out through the form on the PKU Bantul hospital website, then the program design is closed for program review, based on the assessment it is determined if the program can be included in the work program
2. The program that has been included in the work program is then analyzed by the head of the installation and the ER and outpatient manager, the results of the analysis are then submitted to the director for approval,
3. Work programs related to the addition of personnel or human resources will be implemented in the first 3 months, then an evaluation is carried out if the addition of personnel can improve the performance of the ER
4. Programs related to facilities and infrastructure are communicated to the procurement unit as needed and scheduled to be implemented
5. Programs related to SOPs and regulations will be submitted to the hospital service quality unit, then reviewed by the quality unit and disseminated to related units, after being implemented, an evaluation is

carried out

6. In activities related to the ER unit, the activity was consulted by the ER manager and the head of the installation, after obtaining approval, implementation and socialization was carried out in the ER unit, a few months later an evaluation was carried out to assess the achievement of the activity.

7. In activities related to other units carried out from a unit meeting then a Disposition is submitted to the related unit for review and approval from other related units. The results of the disposition are submitted to the appropriate director and known to the installation and manager.

4. DISCUSSION

4.1 Descriptions of Respondents

In this study, the age of the research subjects was mostly in the range of 46 to 65 years, age was categorized based on the Indonesian Ministry of Health in 2009 where the range was included in the category of early elderly, according to research by [16] age is the main risk factor in increasing the prevalence of the disease, due to the process of cell degeneration and the immune system that causes the elderly to be more susceptible to disease.

The difference in the number of subjects between men and women in this study only had a slight difference with the number of male subjects being more, the number of male subjects was 50.9% and female subjects were 48.6%, based on research by [13] it was found that there is a relationship between level of satisfaction with gender, it is known that women have a higher perception of the services they receive than men.

In a study by [15], it was found that there are differences between men and women in a service, where men have competent and professional expectations in providing services and women have more expectations for polite and good service delivery.

The highest level of education in this study is SMA and its equivalent, SMA is a secondary education level and is a mandatory education standard in Indonesia, education level affects perceptions and from an individual this is in accordance with research by [18] known that individuals with Higher education levels have better understanding and assessment than individuals with lower levels of education.

4.2 The gap between Importance and Satisfactory of the Patient

Quality Function Deployment is a method used to identify priority attributes of a product or service, the method used in QFD lies in the matrix used as a translator between attributes based on the consumer perspective with management recommendations, the use of QFD in hospitals as health service providers engaged in services are used to identify problems with hospital service attributes and determine the priority weights of service attributes that need to be improved and provide recommendations for appropriate solutions in improving and enhancing these service attributes [1], [5], [9].

In determining the appropriate service aspects from the patient's perspective on emergency room services during the pandemic, a study was conducted to make a questionnaire with attribute sources in previous QFD research, guidelines for COVID-19 services by the Ministry of Health and interviews with IGD PKU Bantul patients.

Based on the survey, there were 15 main service attributes related to services received by patients in a pandemic condition at the ER PKU Bantul Hospital, then these 15 attributes were categorized into 5 main service aspects, namely aspects of medical services, nursing, PPI, administration, and supporting services.

These 5 service aspects are an outline of the services received by patients related to services in the ER. Based on the Voice of Customer on these 15 attributes, it was found that there was a difference in the gap in the level of importance and level of satisfaction with services at the ER PKU Bantul Hospital, which showed that there were services that still needed to be improved in the ER services at PKU Bantul Hospital in a pandemic condition.

This is in line with previous research related to QFD gap analysis in hospital services, study by [12] found several gaps from the service aspect which showed a gap between the expected service and the service received by the patient, so that the gap difference was a gap for home services pain that needs to be repaired.

Voice of Customer obtained 212 respondent data using a questionnaire with 15 service attributes based on the results of the questionnaire survey obtained previously, Voice of customer contains the level of interest and patient satisfaction related to services received at the ER, the assessment is carried out with a Likert scale of 1 to 5 where the more the high value given indicates the patient's suitability for the related service attributes, the results of the Voice of Customer are used to determine the gap or gap between the service expected by the patient and the service felt by the patient when getting services in the ER.

The voice of expert or technical response was obtained through interviews with 3 main stakeholders related to the ER management of PKU Bantul Hospital, namely the Director of Services, the ER and Outpatient Manager and the Head of the Emergency Room, each stakeholder was presented with a patient gap analysis and a response was obtained technical aspects of each.

4.3 Analysis Matrix House of Quality

The analysis of the House of Quality matrix was carried out by the quality function deployment team consisting of researchers, doctors, nurses, and IGD PKU Bantul admins, the analysis carried out by the team attempted to obtain various coverage and relationships of each aspect of service with field conditions in the ER Hospital. PKU Bantul during the pandemic.

The results of the analysis from the house of quality matrix show a positive and strong correlation and relationship from each Voice of Customer and Voice of Expert, based on the formula from house quality, a ranking of service priorities starts from the highest priority to be carried out and has the potential to provide good results if improvements are made to the lowest priority, the highest priority is on aspects of medical services related to patient waiting time in receiving services with a technical response which is the highest priority recommendation in improving these services is optimizing the application of patient waiting time standards.

The implementation of Quality Function Deployment in health services has been widely used, in previous research on research by [10] where it was found 9 main attributes which are priorities that need to be improved which are aspects of medical services, in research by [11] obtained 11 attributes which is prioritized which is divided into 5 medical aspects, 3 nursing aspects and 3 supporting aspects, priority number 1 is obtained in the medical service aspect, namely providing information by doctors regarding the patient's condition. Based on this research, it was found that the attribute that became the main aspect that was prioritized was the medical aspect.

4.4 Logical Framework Analysis Implementation

Logical Framework Analysis is used in making a service improvement program design, in this research, the goals, objectives, outputs, and activities are produced to improve the quality of services in the ER, each of

which has indicators, evidence of achievement and expectations of achievement [22].

The Logical Framework Analysis in this study was carried out with online Focus Group Discussions using Zoom media, due to the increasing pandemic conditions and the schedules and activities of participants from the ER. During the pandemic, participants included the management department related to the ER, namely the ER manager and the head of the ER, representatives from each ER personnel, namely doctors, nurses and emergency department administration, as well as the head of the PPI as a unit related to ER services, especially in pandemic conditions.

Based on the discussions carried out on the identification of problems and problems, it is then determined which problems are prioritized by both management and personnel, and have the potential to be improved and developed. The identification of the problem chosen is the waiting time for patients to receive services and the chosen goal in improving these services is optimizing the application of patient waiting time standards that can be done to improve each of these factors.

These results are in line with the previous research of [14] related to the development of LFA in the program obtained 4 targets, 4 outputs and 9 activities, which is a series of the coronavirus prevention program. In this study also found the key to the LFA in the program, namely an integrated team approach, participation of all relevant stakeholders and appropriate leadership.

Based on the results of the focus group discussion, we got a program that contains targets, objectives, 4 outputs, and 12 activities, each of which has its own indicators of achievement achieved through evidence of achievements that have been determined in achieving the expected outcomes.

By holding a focus group discussion, it is proven to be able to increase participation and understanding from both management and personnel in discussing services from each opinion and perspective in a transparent manner and the resulting design is a combination of all IGD and related equipment so as to provide an inclusive design, focused, and have been agreed and agreed upon.

4.5 Implementation of integration QFD and LFA on developing A&E quality improvement framework in the pandemic era.

Quality Function Deployment identifies problems and produces priority recommendations based on weighting based on the patient's perspective and hospital management response. The limitation of quality function deployment is that this method only produces up to recommendations so it can only be used as a method of identification, therefore a method is needed in processing these recommendations in order to provide benefits and functions in improving hospital services [1], [5].

Logical Framework Analysis can produce a series of programs that are systematically arranged and structured as well as measurable as a method in building a program, especially a program that is complex and related to various units or aspects, so that the use of Logical Framework Analysis in developing a program design for service improvement in hospitals is one of the one right choice [8], [14].

The application of QFD in the LFA step is used to build a framework that is used as a basic reference for participants in obtaining a data-based picture so that the LFA process carried out can not only be more focused and specific in the development of program designs but also be more efficient [5]. In the implementation of the LFA, integration is carried out with QFD where the results of the house of quality recommendations are used as the basis of reference for the basic framework of the LFA, in the implementation of the Focus group

discussion, there is an explanation regarding the identification of problems in services and the results of the formulation of the house of quality.

The integration of QFD in LFA increases the effectiveness and focus of the development design discussion, especially in the first and second steps, namely problem identification and problem tree development for a longer time in determining the services that need to be identified and developed problems in each aspect.

After the presentation, it appears that the discussion participants understand the services that need to be identified and get an overview and consideration of the aspects that need to be prioritized in an improvement in service quality so that the discussion can run more effectively and be more focused, which then produces the appropriate achievements, targets, and indicators prioritized in a more efficient way.

In this study, it is known that it is important for management to determine the reference or basis used in a focus group discussion, especially in designing units with high complexity and intensity such as the emergency room in a pandemic condition.

5. Conclusion

Based on this research, it can be concluded that the integration of QFD and LFA is an effective and efficient method in building a structured and systematic design of service quality improvement programs in hospitals based on the patient's perspective and the potential of the hospital, especially in pandemic conditions.

QFD identifies problems in service from the perspective of patients in a pandemic condition which is then formulated with recommendations from hospital management, and LFA uses these recommendations as a basis in building achievements, targets and a series of activities that are measured, made and agreed upon by the management, personnel at the hospital units and other related units.

So that a program design is produced with specific goals and objectives also has measurable planning and implementation, which makes easier for hospital management to implement quality improvement programs and it's expected to improve the quality of hospital services.

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