Design and Development Performance Assessment System for Medical Staff Implementing the Regulations of the Indonesian Ministry of Health (Case Study: Arifin Achmad General Hospital, Riau Province)

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ABSTRACT: The difficulty in conducting performance assessments of medical staff is the background for the Arifin Achmad Regional General Hospital (RSUD) to implement performance assessment standardization which refers to the technical guidelines for the assessment of Individual Work Indicators (IKI), Minimum Service Standards (SPM) of Hospitals, and the Dictionary of Performance Indicators of Hospitals and Centers (KIKRSB). The standardization of the assessment will be implemented in the Information System so that it can facilitate the process of input and monitoring of the performance results of the assessed medical staff. Each indicator is weighted with *urgency, seriousness and growth* (ultrasound) techniques. The Medical Staff Performance Assessment Information System was built using PHP programming language, tested with *the user acceptance test* (UAT) technique to the deputy director of medical and nursing and related medical staff at Arifin Achmad Hospital with a result of 95.4% indicating that the system was acceptable.

KEYWORDS: Medical Staff Performance, Performance Assessment System, Individual Performance Indicators

I. INTRODUCTION

The Arifin Achmad Regional General Hospital of Riau Province has not implemented standardization in the performance assessment of its employees, especially for the Medical Staff Group (KSM). The impact of the absence of performance evaluation is that the Deputy Director of Medical and Nursing cannot measure the quality of each KSM, the high number of patient complaints, and the lack of comprehensive service standards. In KSM surgery, the current performance assessment is still carried out quantitatively, namely by paying medical staff remuneration every month based on the number of surgeries performed. To implement the standardization of performance assessment, of course, Arifin Achmad Hospital refers to the Technical Guidelines for the Assessment of Individual Work Indicators (IKI), and the Dictionary of Hospital and Center Performance Indicators (KIKRSB). The results of these guidelines will later be in the form of indicators that are in accordance with each KSM, and periodic assessments will be carried out in accordance with the indicators. On each indicator, there will be an officer responsible for providing assessments.[1] [2]

Because not all regulations set the weight of each indicator, the weighting process is carried out by the method *Urgency Seriousness Growth* (ultrasound). The ultrasound method is a scoring method to determine the order of priority issues, by assessing the level of risk and impact of each problem. With this ultrasound method, it will be seen which indicators will be the priority of the selected indicators.[3]

With the large number of medical staff, assessment officers, and assessment indicators, as well as the need for accuracy when calculating values, it is necessary to apply information technology to facilitate data management and delivery of performance information, and can make the results of performance assessments more objective, and easier to analyze the performance results of medical staff.[4]

II. BASIC THEORY

A. Individual Performance Indicators (IKI)

The Ministry of Health through the Directorate General of Health Services issued a decree with the number HK.02.03/I/2630/2016 concerning Technical Guidelines for the Assessment of Individual Work Indicators (IKI) in 2016 for the President Director of General / Special Hospitals and Heads of Centers within the Directorate General of Health Services of the Ministry of Health of the Republic of Indonesia.[1]

B. Hospital Minimum Service Standards (SPM)

Minimum service standards (SPM) of hospitals is a provision or guideline that regulates the level of basic health services that must be provided by hospitals to the community. This SPM is designed to ensure that hospitals provide safe, quality, and accessible health services to all levels of society in accordance with applicable regulations. [2].

C. Dictionary of Hospital and Center Performance Indicators (KIKRSB)

The dictionary of hospital and center performance indicators is published by the Ministry of Health of the Republic of

Indonesia through the Directorate General of Health Development. This performance indicator dictionary has 2 assessment areas, namely the clinical area (49 indicators) and the managerial area (43 indicators). The selected indicator is only an indicator for surgical KSM.[2]

D. Urgency Seriousness and Growth (USG)

Urgency, Seriousness, Growth (USG) analysis is one of the scoring methods to compile the order of priority issues that must be resolved. At this stage, each problem is assessed for its level of risk and impact. If the number of scores has been obtained, it can determine the priority of the problem. The scoring step using the ultrasound method is to make a list of the root of the problem, create a matrix table of problem priority with a scoring weight of 1-5 and the highest value will be the priority of the problem.[3]

III. METHODOLOGY

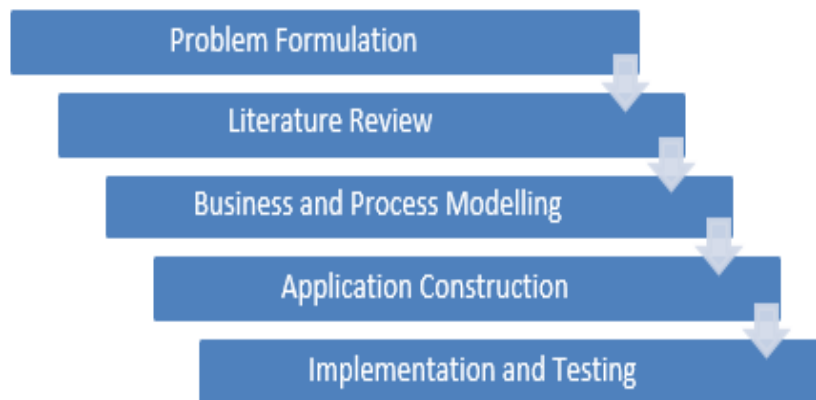The research methodology of this research can be seen in Figure 1:

Figure 1: Research Methodology

The **first** stage carried out in this research is to formulate a problem for the topic to be researched. The problem that occurred in this study was the difficulty of assessing the performance of medical staff due to the lack of an information system for assessing the performance of medical staff at Arifin Achmad Hospital. The **second** stage is a Literature Study, by reviewing books, research journals related to the development of performance appraisal information systems.

The **third** stage is Business Modeling, divided into several processes, starting with conducting interviews and group discussions to find out the business process, performance assessment, and system needs to the Deputy Director of Medical and the staff of Arifin Achmad Hospital. Followed by the process of designing indicators for performance assessment guidelines, namely Individual Work Indicators (IKI), Minimum Service Standards (SPM) for Hospitals, and Dictionary of Hospital and Center Performance Indicators. The next process is to give weight to each indicator. In this weighting process using the *Urgency Seriousness Growth* (USG), which is to determine which indicators are priorities, measured from the *Urgency, Seriousness, Growth* with scoring weights using the Likert scale (5 = very large, 4 = large, 3 = medium, 2 = small, 1 = very small).

The **fourth** stage is to model business processes and their interactions with information systems, using *Unified Modelling Language (UML)*. The **fifth** stage is to build an application, using a web-based PHP platform and using a MySQL DBMS. The **sixth** or **last** stage is to implement and test the medical staff performance assessment information system using testing techniques *User Acceptance Test* (UAT).

IV. RESULT AND DISCUSSION

A. Problem Analysis

The problem in this study is that there is no standardization in the performance assessment of medical staff at Arifin Achmad Hospital, which makes it impossible to measure the quality of a KSM. To prepare the standardization, indicators for the performance assessment of medical staff are made that are guided by regulations issued by the Ministry of Health of the Republic of Indonesia, including IKI, KSM, and KIKRSB.

B. Design of Assessment Indicators

After conducting an interview with the Deputy Director of Medical and Nursing of Arifin Achmad Hospital, 19 assessment indicators for surgical KSM have been prepared. The 8 indicators were taken from the Individual Performance Indicators (IKI), 7 indicators were taken from the Dictionary of Hospital and Center Performance Indicators (KIKRSB), and 4 indicators were taken from the Hospital Minimum Service Standards (SPM). The indicator is divided into 2 areas and 5 categories, namely clinical areas and managerial areas.

Table 1 Performance Assessment Indicators of KSM Surgery at Arifin Achmad Hospital

Category	No	Indicator Title	Source
Clinical Area			
Compliance with Service Standards and Patient Safety	1	CP Compliance	KIKRSB
	2	Implementation of Operational Safety	IKI
	3	Compliance with Fornas	IKI
	4	No Incidents of Misdirection	KIKRSB
	5	Occurrence of Death at the Operating Table	SPM
	6	No Incident of Wrong Person Operation	SPM
	7	No misconduct in surgery	SPM
	8	No incident of foreign bodies left on the patient's body after surgery	SPM
Infection Control Level	9	Surgical Area Infections	IKI
	10	Hand Washing	IKI
Achievement of Medical Indicators	11	Patient Death in the Emergency Room	IKI
Managerial Area			
Customer Satisfaction	12	Customer Satisfaction	KIKRSB
	13	Speed of Response to Complaints	IKI
Timeliness of Service	14	Emergency Respon Time	IKI
	15	Waiting Time for Respiratory Emergency Handling at the Emergency Room	KIKRSB
	16	Emergency Psychiatric Respon Time	KIKRSB
	17	Outpatient Start Time	KIKRSB
	18	Elective Surgery Waiting Time	KIKRSB
	19	Complete Medical Record Return in 24 Hours	THIS

Based on the 19 indicators above, it is further divided into 2 assessment times, namely monthly and daily assessments, because not all indicators can be assessed daily and not all indicators can be assessed monthly. There are 12 monthly assessment indicators and 7 daily assessment indicators.

Table 2. Informant and Assessment Time

	Indicator Title	Informant	Time
1	CP Compliance	Head of Medical Committee	Monthly
2	Implementation of Operational Safety	Head of Surgical Installation	Monthly
3	Compliance with Fornas	Head of Pharmaceutical Installation	Daily
4	No Incidents of Misdirection	Head of Surgical Installation	Monthly
5	Occurrence of Death at the Operating Table	Head of Surgical Installation	Monthly
6	No Incident of Wrong Person Operation	Head of Surgical Installation	Monthly
7	No misconduct in surgery	Head of Surgical Installation	Monthly
8	No incident of foreign bodies left on the patient's body after surgery	Head of Surgical Installation	Monthly
9	Surgical Area Infections	Head of Surgical Installation	Monthly
10	Hand Washing	Head of Surgical Installation	Daily
11	Patient Death in the Emergency Room	Head of Emergency Installation	Monthly
12	Customer Satisfaction	Head of Customer Service	Monthly
13	Speed of Response to Complaints	Head of Customer Service	Monthly
14	Emergency Respon Time	Head of Emergency Installation	Daily

15	Waiting Time for Respiratory Emergency Treatment	Head of Emergency Installation	Daily
16	Emergency Psychiatric Respon Time	Head of Emergency Installation	Daily
17	Outpatient Start Time	Head of Outpatient Installation	Daily
18	Elective Surgery Waiting Time	Head of Surgical Installation	Monthly
19	Complete Medical Record Return in 24 Hours	Head of Medical Record	Daily

C. Weighting

The *scoring* process is carried out by giving a score of 1 to 5 based on the likert scale (5 = very large, 4 = large, 3 = medium, 2 = small, 1 = very small). The indicator with the highest total score is the prioritized indicator.

1. Informant Data Feature

Figure 2: Informant Data

2. Value Data Features

Figure 3: Value Data

D. Design and Implementation Results

The results of the design and implementation of the performance assessment system for medical staff at Arifin Achmad Hospital can be seen through Figure 2-5.
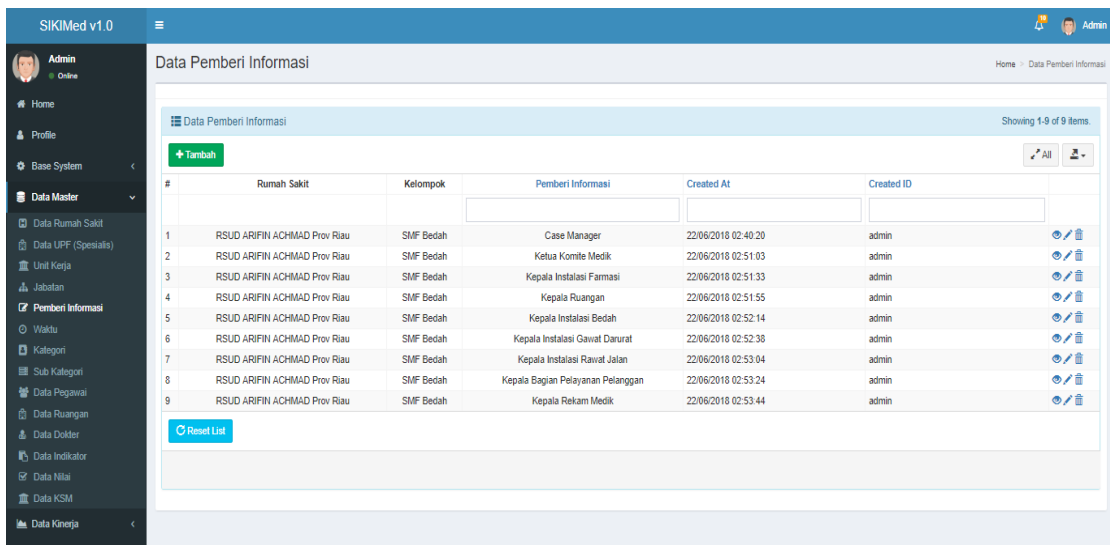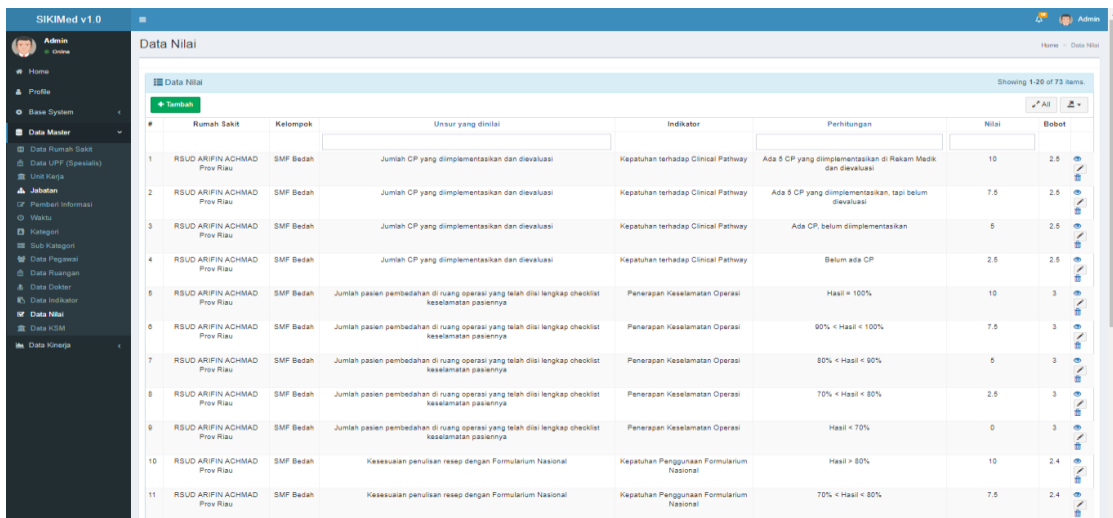
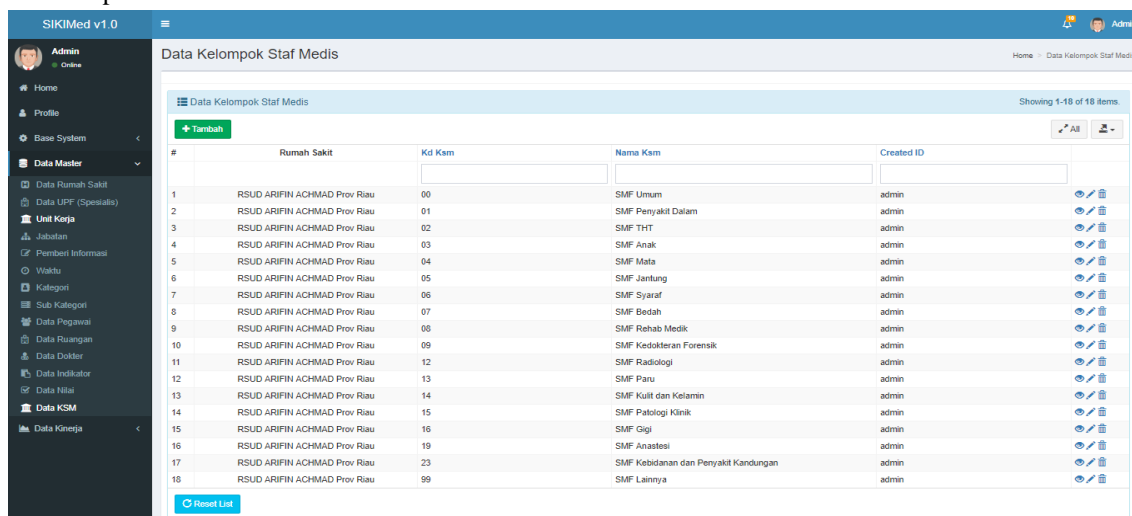3. Medical Staff Group Data Features

Figure 4: Medical Staff Group Data
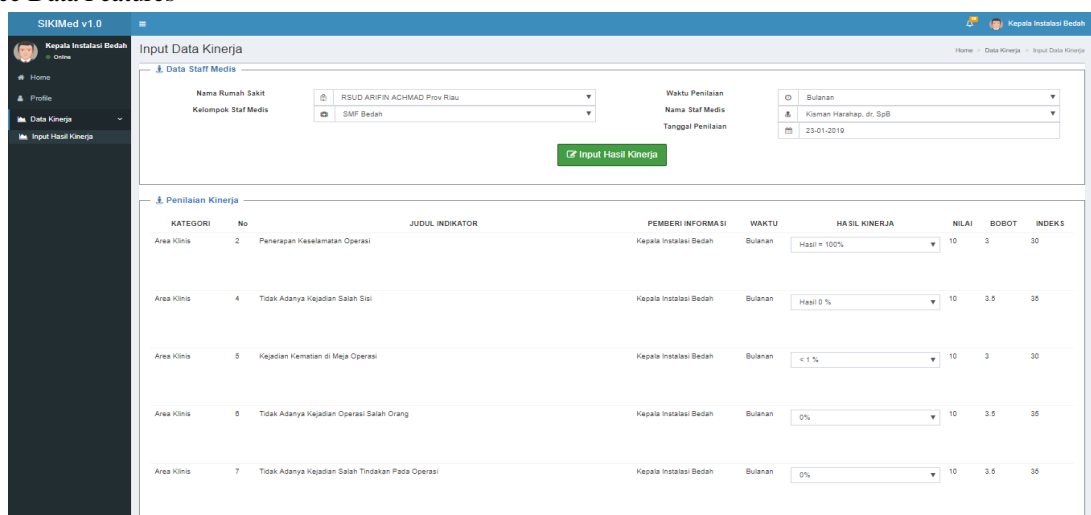
4. Performance Data Features

Figure 5: Performance Data

V.   CONCLUSION

After completing the development stage of the medical staff performance information system based on regulations from the Ministry of Health of the Republic of Indonesia, the following conclusions can be drawn:

1. The medical staff performance information system can assess the results of medical staff performance in daily and monthly performance assessments based on indicators made based on 3 regulations taken.

2. Based on the User Acceptance Test (UAT) session 1 questionnaire assessed by the Deputy Director of Medical and Nursing of Arifin Achmad Hospital, 95.4% of the system was declared acceptable, and based on the UAT session 2 questionaire filled out by 10 respondents, 83.2% stated that this medical staff performance assessment system was acceptable.

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