

Implementation of Management Information Systems at Meuraxa Hospital Banda Aceh

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Abstract—Introduction: Meuraxa Regional General Hospital Banda Aceh has been running a hospital management information system (SIMRS) since 2016, but SIMRS in outpatient care only applies to registration counters, in the ER SIMRS is not yet functioning optimally, in support SIMRS only functions in the laboratory whereas in radiology and physiotherapy the system is not yet functional, while in patient care it has not been implemented at all, they are still using the old system, namely HMIS (Health Management Information System). **Objective:** To determine the optimization of SIMRS at the Meuraxa Regional Hospital in Banda Aceh and to analyze the extent to which information system component management functions have been carried out as well as the obstacles discovered and the strategies implemented to overcome obstacles. **Methodology:** This research is a qualitative descriptive research. Data analysis uses a thematic approach. The research subjects were upper, middle and lower level managers who had the authority to manage SIMRS at the Meuraxa Regional Hospital in Banda Aceh. **Results:** Planning, organizing, implementing, controlling, evaluating and innovating the information system components of the Meuraxa Regional Hospital in Banda Aceh still needs improvement. **Recommendations:** Meuraxa Banda Aceh Regional Hospital has carried out the information system component management function, but it is not yet optimal because many obstacles were found in achieving it.

Keywords—Infrastructure, Human Resources Tools, Procedures.

I. INTRODUCTION

Management information systems (MIS) are not just a technological development. Management information systems (MIS) are also related to organizations and their human processors. A management information system is a system between humans and machines that is integrated (integrated) to present information to support operational, management and decision-making functions to present management information. Hospital management information system (SIM-RS) is a management information system implemented in hospitals. Hospital SIM can provide accurate, timely information for decision making at all administrative levels in planning, implementation, supervision, control and assessment (evaluation) in hospitals.

The Hospital Management Information System (SIMRS) is a subsystem in the Hospital that processes all information relating to humans as users according to their respective roles (Haux, 2010:20). Hospital Management Information Systems play an important role in supporting the entire process in the Hospital with information technology (Chen & Hsiao, 2012).

The implementation of SIMRS is really needed to integrate all services in hospitals. Modern SIMRS is very comprehensive, integrated, and specifically as an information system designed to manage administrative processes, finances, clinical aspects of hospitals and health service facilities, which is an important focus as a basis for providing information. care for patients and integration with external institutions such as health insurance and other health service facilities which are interconnected in the exchange of information (Ismail et al., 2010).

The first implementation of a Hospital Information System will face various issues and challenges such as high initial implementation costs, the amount of time required for clinicians to use the system, new technical conditions and technologies.

Other fundamental problems relate to lack of expertise in using computers, and the complexity of tasks and functions as well as ethical issues such as certification, security, privacy and confidentiality (Ismail et al., 2013).

Every new patient received at the registration counter is interviewed by the officer to obtain identity data which will be filled in on the clinical history summary form. Each new patient will receive a patient number which will be used as an identification card, which must be brought at each subsequent visit to the same hospital. After completing the registration process, new patients are invited to wait at the destination polyclinic and the medical records officer prepares the medical record file which is then sent to the patient's destination polyclinic. In the registration process, patient data is registered using SIMRS, so that patient data is recorded in all service areas such as laboratories, physiotherapy and so on (Kisdianata, 2016).

Based on the results of preliminary data that the author has conducted with Meraxa District Hospital officers, information was obtained that SIMRS has been functioning since 2016. The implementation of this system is due to the new instruments and hardware that should have been running. However, in reality, SIMRS in outpatient only applies to the registration counter, in the ER SIMRS is not yet functioning optimally, in supporting SIMRS it only functions in the laboratory, while in radiology and physiotherapy the system is not yet functional, while in inpatient care it has not been implemented at all, they are still using the old system, namely HMIS (Health Management Information System).

The development of SIMRS by hospitals internally certainly requires quite a lot of time and resources and is capable. Not to mention the costs incurred for SIMRS development which are not small. Then also pThe provision of infrastructure must not be adjusted to the available budget and there was once a menu

for installation development in the DAK, but the planning did not know where the budget was taken from, because the available menu appeared only for development, not for planning.

Based on the description above, researchers are interested in taking the title "Implementation of a Hospital Management Information System at Meuraxa Regional Hospital, Banda Aceh City".

II. METHOD

This research is a qualitative descriptive type with a semi-structured interview method, namely in-depth interviews recorded with a tape recorder.

A. Location

The research location is Meraxa Hospital, Banda Aceh City, Aceh Province in 2023.

B. Time of Research

The research time is from 23 to 28 July 2023.

C. The Sample in This Research

The characteristics of the participants in this study consisted of the Deputy Director, Head of Medical Services, Head of General Affairs, Head of Emergency Room, Head of SIMRS Installation, IT Staff, and 2 service doctors.

III. RESEARCH RESULTS

From Table 1. The identities of the informants in this study are as follows: The first informant is 54 years old and holds the position of Deputy Director of Meuraxa Hospital, with a master's degree in hospital management. The second informant is 55 years old, works as Head of the Medical Services Division, and has a recent education as a general practitioner. The third informant is 51 years old, works as Head of General Affairs at Meuraxa Hospital and has a master's degree in management. The fourth informant is 45 years old, works as Head of Emergency Installation, has a recent education in NERS. The fifth informant is 52 years old with a master's degree in informatics engineering and holds the position of Head of the SIM Hospital Installation.

TABLE 1. Frequency Distribution of Participant Characteristics

No	Age	Last education	Position
1.	54 Years	Master	Deputy Director
2.	55 Years	General practitioners	Head of Medical Services Division
3.	51 Years	Master	Head of General Affairs
4.	45 Years	NERS	Head of ER
5.	52 Years	Masters in Informatics Engineering	Head of SIMRS Installation
6.	54 Years	Medical specialist	Service Doctor
7.	54 Years	Medical specialist	Service Doctor
8.	52 Years	General practitioners	Young expert health admin

The sixth informant is 54 years old with a specialist medical education and holds a position as a service doctor. The seventh informant is 54 years old with a specialist medical education and holds a position as a service doctor. Finally, the

eighth informant is 52 years old with his last education being a bachelor's degree in medicine and holds the position of young expert health administrator.

Infrastructure

There were several obstacles that were discovered after the researchers conducted interviews with several selected informants regarding the availability of infrastructure in the form of equipment and hardware.

Hardware

Several problems were collected by the researchers from various interviews conducted, including those conveyed by the Head of General Affairs, Head of SIM Installation at Mandiri Hospital, Head of Yanmed, Head of Emergency Installation, DPJP, and triangulation informants. stated that Meuraxa Hospital should have an adequate data back-up room because the data capacity of this hospital is quite large, the lack of computers to operate the Mandiri Hospital SIM owned by Meuraxa Hospital also really disrupts the busy operations, but it still needs to be done Data input is the obligation of doctors, nurses and other fields who work to fulfill service requirements, and not all polyclinics have printing equipment (printers) even though their existence is also very urgently needed to speed up performance. Meanwhile, complaints experienced by patients were represented by triangulation informants, namely the long waiting time in queues for treatment, especially during peak patient arrivals at certain times, which was caused by problems in data entry by nurses.

The various information above can be seen in several excerpts from interviews conducted by researchers below.

According to the Head of General Affairs:

"The space required to back up the RS SIM data is not yet available sufficient for the capacity of the large Meuraxa Hospital, so far there is only one SIM RS installation room and the server room only has 4 rooms. Furthermore, regarding the availability of hardware and software, it also does not meet what should be the standards for this hospital. At least every room in Meuraxa Hospital must have a minimum of 2 computer units for each room".

According to the Head of Emergency Installation:

"Then the function of the Mandiri Hospital SIM is still not fully capable of printing in the form of printing due to limited availability of equipment. Based on information from the Head of General Affairs, there are 2 computer units, so 1 polyclinic only has a PC so the doctor or nurse is still in charge. Efforts have been made to fulfill this limitation, requiring each polyclinic to have at least 2 computers. Busy poly-polys already exist, such as the neurology poly for example, there are already nurses and doctors who can handle it, not all of them because there will be polys that are not busy so only the doctor will be there, like the children's poly, it is not yet crowded, but if it is an internal poly, the eye poly is already available. 2 units. "The number of rooms needed to backup SIMRS data is based on the needs of only 1 room and access is owned by SIMRS officers."

According to the Head of Yanmed:

"Currently, polyclinics and other rooms only have one computer unit, there should be at least 2 computer units, each of which should be owned by doctors and nurses per unit."

According to the Head of Emergency Installation:

"Currently, there is only 1 computer for the admin to increase the procedures, all the medicines, 1 more computer, all of which is there for the person to increase the post-mortem, the post-mortem letter, so if the doctor increases it, it won't be enough. You must have at least 5 computers. This situation has been reported since December last year and perhaps the provision of these units is underway."

According to DPJP:

"There is still computer availability here *enough, but if you have to have a doctor fill it in, it might not be enough. WAG doctors report any problems that might occur immediately. For now, it's still enough because there are still nurses filling in, but if later doctors have to fill in, there won't be enough computers*".

According to the Young Expert Health Admin:

"There is not enough space for a hospital of this size because it still needs additions."

According to triangulation informants:

"The wait is long, especially when it's busy. After serving me as a patient, I was typing away again on the computer. Basically, you have to be extra patient."

The standard energy requirements in SIMRS are adjusted to the number energy demand on each part. The policy for maximizing the performance of SIMRS is to issue regulations that are in accordance with its rules and implement these policies in accordance with hospital administration in the form of a Hospital Management Information System related to the implementation of SIMRS in accordance with educational needs and standards.

Based on the reduction/conclusion above, it is clear that triangulation informants (recipients of health services) feel that they have to wait a long time when their data is being entered by officers, especially if the number of patient visits is high so the server becomes slow.

Software

Several problems that researchers found after conducting interviews with informants, both from the Head of Yanmed and DPJP, obtained information that the software owned by Meuraxa Hospital to operate the Hospital SIM still needed ongoing improvements and capacity increases to meet various data access needs that could be used. to support hospital operations and there are still computer units available in limited quantities but they also have problems when used so they require maintenance for the various computers owned by Meuraxa Hospital. Apart from that, the problem felt by patients, represented by triangulation informants, is that the hospital's SIM does not run optimally when patient visits are high because the server connection is slower than normal times with patients who are not so busy.

The various information above can be seen in several excerpts from interviews conducted by researchers below.

According to the Head of Yanmed:

"Regarding the availability of software and hardware, it is also not yet adequate. Currently, polyclinics and other rooms only have one computer unit, which should have at least 2 computer units, each of which should be owned by doctors and nurses per unit."

According to DPJP:

"There was also a problem with the computer which was immediately followed up with a WA to the group and it was resolved straight away"

According to triangulation informants:

"The more patients there are, the longer the service will take. "The reason the server is slow is because there are a lot of patients so the connection is disrupted."

This reduction was continuous with the reduction from key informants knowing that the provision of computer equipment was not evenly distributed in each room and there was a perceived delay in terms of providing computer units which were really needed for operations. The space available for backing up data is still very minimal, if the level of need is there should be a lot of space. The effectiveness of the Mandiri Hospital SIM also still needs improvement to be able to meet the expectations of users so that it can help them massively in operations that are so busy for various groups.

Human Resources Toolkit

Results of in-depth interviews with the Deputy Director, head of medical services, head of general department, head of emergency department, head of SIM hospital installation, IT personnel, and service doctors regarding human resources to support the implementation of SIM Hospital There were several obstacles found after researchers conducted interviews with several selected informants regarding human resource tools in the form of application use and data entry.

Application Usage

Several problems that researchers gathered from various interviews conducted, both conveyed by the Deputy General Director and triangulation informants stated that many users of the Mandiri Hospital Meuraxa Hospital SIM are still not used to using the application provided by the hospital, even though its use is to support operational activities. Hospitals play a very important role. The following is an excerpt from the interview that the researcher conducted with the general representative of Meuraxa Hospital and the triangulation informant as follows:

According to the Deputy General:

"The perceived obstacle, namely being seen and observed in the group, is actually not an obstacle, it's the operations that are not understood, for example, even though the people who come later will already be able to get a hospital driver's license, maybe the nurses and service staff are not used to it, there will be more training, so it's like this, right? "There are new nurses, there are old ones, maybe the old ones don't want to guide the new ones."

According to Triangulation Informant:

"I had to wait a little longer while the nurse typed into the computer, not to mention waiting to get the medicine, it took a long time."

Based on the reduction/conclusion above, it can be explained that the key informant (deputy director) stated that the number of human resources was sufficient, only that the number of computer units available was still insufficient. The step taken is to report to the procurement department and the report form has been received but it cannot be realized yet. Furthermore, there are problems in terms of inputting data into the system which, when patients are busy,

feels overwhelmed to make it happen and often disrupts services.

Data Entry

Several problems that researchers found after conducting interviews with informants, both from the Head of Yanmed and triangulation informants, obtained information that the Hospital SIM still needed improvement in terms of its system because various adjustments were still being made. Then, in terms of the time that must be provided to input patient data, there are also limitations, especially when patients are busy visiting. The various information above can be seen in several excerpts from interviews conducted by researchers below.

According to the Head of Yanmed:

"Efforts are being made to eliminate obstacles in the form of a "central" system, that is, if there are problems, whether they are slow, whether there is a system that they understand, they coordinate with IT which they immediately respond to. There are doctors who are technologically clueless, who are technically clueless in coordinating with nurses or officers. But it takes time, ma'am, you have to input it whether you like it or not, you have to input it, you can do it, you have to be able to do it, you have to think for yourself how to do it. So far, it's still being input, maybe you'll get help, if not, you can't be served today at the polyclinic, there's no name, the patient also can't get medicine, they can't get services, they can't get it in, whether they want it or not, they can't get it, they don't have to get it, they're required to input it. If you don't input, it will really disrupt the service, the patient can't be served, so how do you have to input? We suggest that doctors must input. Any IT obstacles that intervene."

According to triangulation informants:

"Nurses seem overwhelmed by having to work extra hours when there are a lot of patients, plus they still have to fill in data on the computer."

This reduction was continuous with the reduction from key informants knowing that the provision of computer equipment was not evenly distributed in each room and there was a perceived delay in terms of providing computer units which were really needed for operations. The space available for backing up data is still very minimal, if the level of need is there should be a lot of space. The effectiveness of the Mandiri Hospital SIM also still needs improvement to be able to meet the expectations of users so that it can help them massively in operations that are so busy for various groups.

Procedure

Results of in-depth interviews with Deputy Director and informant triangulation regarding procedures to support the implementation of SIMRS. There were obstacles that were discovered after the researchers conducted interviews with several selected informants regarding procedures in the form of system input.

System Input

Several problems that researchers gathered from various interviews conducted, both those conveyed by the Deputy General Director and triangulation informants, stated that the Mandiri Hospital SIM still needs various improvements in its

performance to help the operations of Meuraxa Hospital be more organized, systemized and work optimally. The following is an excerpt from the interview that the researcher conducted with the general representative of Meuraxa Hospital and the triangulation informant as follows:

According to the Deputy General:

"There were several shortcomings that the Mandiri Hospital SIM had when it was launched because it was not yet known if users had not yet used it. So as soon as it is used, there is a lot of feedback for immediate improvement. Even now, it is still being improved."

According to Triangulation Informant:

"As long as the service is still considered long by patients, it means the system still needs improvement and improvement. We as patients want to be served quickly and quickly go home."

Based on the reduction/conclusion above, it explains that the informant The key, namely the Deputy Director and triangulation informant, knew that there was a need to increase the capability and capacity of the Mandiri Hospital SIM in its operations so that it could work optimally. Patients, in this case the community, hope that the system and its functions will be improved so that they can support maximum performance.

IV. DISCUSSION

Infrastructure

From the results of interviews conducted with key informants and Triangulation regarding SIMRS infrastructure analysis shows that the provision of computer equipment and printers is not evenly distributed in each room and the procurement process takes a long time. The room for data backup for the purposes of the hospital's SIM also still requires sufficient space because the capacity of the Meuraxa Hospital is quite large and spacious. This is in accordance with the results of direct observations by researchers when conducting interviews with respondents, the provision of computers is uneven and there tends to be a lot of rooms where there are not enough supplies. So, when running SIMRS problems often occur on the server, especially if access is congested then the server is often slow. The provision of computers and other hardware should be provided according to needs so that SIMRS can be implemented well.

SIMRS is an integrated information system that is used to carry out all forms of activities and transactions that occur in hospitals to improve the quality of services and facilitate hospital management in various routine transactions carried out. SIMRS is proposed to be applied and meet hospital needs with a system that is expected to provide solutions as expected.

The benefits of SIMRS are speed of completion of hospital administration work (procurement of goods or medical equipment), speed in tracking patient data, both medical record data and health history data needed in the diagnosis process, speed of service (to complete inpatient or outpatient administration. road), speed in preparing reports for hospital management. In general, SIMRS can improve the quality of service, maintain good and correct medical practice standards, become a very effective coordination

tool, support the control function consistent, and ultimately can increase hospital income.

The implementation of a Hospital Management Information System (SIMRS) is a solution for implementing information technology in the health sector, which is capable of managing data and presenting information well to support hospital activities. This system can integrate the entire flow of the hospital's health service business processes in a coordination network starting from reporting and administrative processes and providing information quickly, precisely and accurately. Of course, this system must be computer-based, which is the main supporting hardware for the system. Many hospitals that use conventional administration feel that they have lost opportunities to gain benefits due to weak or slow coordination between departments and a lack of fast, precise, accurate and integrated information support.

Hospital Information System is a subsystem of the entire technical hospital which consists of all information processing systems used by the individuals concerned in accordance with their respective roles in using the system, the purpose of using this system is to support patient care starting from patient administration by considering economic and legal aspects related to patient data security (Haux, 2010:28). In the current era, there is a modern Hospital Information System, namely a comprehensive and integrated information system with a special design to manage all aspects starting from administration, finances and clinical needs of hospitals and other health service facilities. This information system is one of the focuses. the main health service support system in hospitals (Ismail et al., 2010).

Hospital Information Systems have 5 important components or modules including registration, request data entry and results reporting, clinical documentation, scheduling, and patient billing (Mehdipour & Zerehkafi, 2013). In the implementation process, the Hospital Information System must have several integrated modules starting from front to back services and supporting modules including: registration module, medical record module, Order Communication System (OCS) module, billing module, and emergency room, outpatient and emergency service modules. hospitalization (Handayani et al., 2016).

The process of implementing and developing a Hospital Information System is very important to pay attention to the system being able to work effectively and efficiently, which can be achieved with quality human resources, good system and management support, training that supports the process of using the system and improving the quality of hardware. and the software of the system will determine the success of the implementation of the Hospital Information System, so that the system can be implemented in all hospitals which are effectively integrated with each other (Ismail et al., 2010).

Technological development in an organization can create relative advantages, with compatible technology, it is able to minimize complexity in the field so that it has innovative characteristics to face every challenge. Relative advantage is the achievement of technological innovation that is considered better than the use of previous technology. An example of relative advantage from the implementation of a Hospital Information System is the ability to reduce hospital operational costs and other relative operational benefits obtained by the

hospital. This advantage can be achieved by developing compatible technology, in the sense of being able to adapt to hospital needs with software and hardware equipment at standard costs, which can be used to adjust policies and standard operational procedures in the field.

One of the driving factors for the implementation of new technology is the difficulties experienced by organizations in achieving their goals, so that the implementation of new technology is developed with the aim of the organization being able to face the dynamics of complexity that hinder the achievement of organizational goals (Ahmadi et al., 2015). Therefore, the development of an innovative Hospital Management Information System is able to face challenges and minimize the complexity of existing health services.

Hospital Information Systems continue to develop every year. The Ministry of Health of the Republic of Indonesia launched a Hospital Information System program called eHealth in 2008 as a form of implementation of Law no. 14 regarding public information, the eHealth program can be implemented in all hospitals starting from the provincial and regional levels that have implemented a Hospital Information System and this system can automate business processes in the hospital (Handayani et al., 2017). The benefits of using SIMRS are very important for the healthcare industry because of its role in supporting various very specific and complex healthcare tasks and services (Ahmadi et al., 2017).

The development of Hospital Information Systems continues into the industrial era 4.0, where the principles of industry 4.0 combine the process of digitizing clinical, medical and laboratory data and implementing automation processes from manual processes that have long been used by hospitals and other health services through cloud computing and system innovations. Internet of Things to manage large amounts of patient data. This system innovation will minimize delay times and provide opportunities for the medical information technology sector to significantly improve health services (Elhoseny et al., 2018).

The use of medical information technology based on the Internet of Things (IoT) is a health education hardware that sends information directly to patients via sophisticated telephones, the information obtained will increase the patient's knowledge of disease conditions and patients can integrate it with pharmacological therapy and non-pharmacological treatments that they get, other facilities that patients get are independent monitoring of health conditions such as checking blood sugar independently, then patients enter their data into the available application and doctors can routinely monitor the patient's condition and attitude towards their illness, making it easier for doctors to make medical decisions for patients and achieving improving health quality and patient satisfaction so that optimal and efficient service is achieved (Friess, 2016: 20).

According to researchers' assumptions, The peak of the infrastructure problem at Meuraxa Hospital is the lack of budget so that infrastructure procurement does not comply with standardization. If related to the Regulation of the Minister of Health of the Republic of Indonesia number 24 of 2016 concerning Technical Requirements for Hospital Buildings and Hardware, it explains that the procurement of computer equipment is adjusted to the number of hospital

needs. Therefore, if the hospital is having problems carrying out operations, the hospital management can carry out procurement according to needs with the costs being charged to the RBA (Business Plan and Budget). Likewise, room requirements are adjusted to the type and needs of services as well as the availability of human resources at the hospital.

Therefore, if the Meuraxa Hospital budget becomes an obstacle or deficiency, then management must be more critical in inspiring regional officials about the importance of SIMRS for hospital services, with the aim of providing assistance in the form of APBD fund allocations to complete all SIMRS infrastructure needs in hospitals.

The use of information technology is very important for health service providers such as hospitals. There are several benefits of SIMRS for hospitals: first, the management of an integrated and controlled management system in hospitals, second, as a response to the increasing demands of society for improving the quality of public services which are increasingly widespread in various sectors, including in health service providing institutions such as hospitals. Information technology is expected to provide solutions to problems of bureaucratic complexity and transparency as well as increase productivity and service quality in terms of effectiveness, efficiency, flexibility and speed. In order to overcome obstacles in health services in hospitals, the existence of SIMRS is really needed, as one of the management strategies in improving service quality and winning business competition.

Human Resources Toolkit

From the results of interviews conducted with key informants and Triangulation regarding SIMRS infrastructure analysis shows that the number of available computer units is still insufficient. The step taken is to report to the procurement department and the report form has been received but it cannot be realized yet. Furthermore, there are problems in terms of inputting data into the system which, when patients are busy, feels overwhelmed to make it happen and often disrupts services.

Based on document review, observations and in-depth interviews, it was found that the IT team had limitations in meeting the doctors' expectations and experienced high difficulties in continuing to input into the system when patients were busy. This is proven by the delivery of information from key informants (head of medical services, head of general department, head of emergency installation, IT staff, and service doctors) that the IT team is experiencing limitations in providing the services expected by Mandiri Hospital SIM users. Meuraxa because their educational background does not allow them to reach the level of need in the medical community.

Furthermore, time is very limited in terms of medical services to the community, system input must still be carried out so as to reduce the duration of time to be able to provide the best health services. Even though the aim is good in terms of the system, when doctors get a lot of patients they will certainly experience being overwhelmed. Not to mention that sometimes the nurses who act as operators in

inputting do not really understand what should be input for cases that only doctors understand.

Organizations can improve their quality by measuring the added value of business processes exclusively from various external and internal customer perspectives, ensuring the quality level of product output and quality processes is an important aspect of process-based organizational design. A good process-based organization has a significant influence on hospital efficiency, so hospitals must implement process-based organizations to increase their efficiency, but to achieve optimal results on efficiency it is very important to make important rules, especially to mobilize the participation of doctors and other health workers. to create an adequate organizational culture (Vera & Kuntz, 2007). Organizations can increase their efficiency by creating a good work environment and system, reducing costs, and increasing organizational productivity (Singh & Srivastav, 2012: 13).

Technology components exist in every clinical procedure, so information system management is an integrated part to achieve efficiency. Efficiency is the maximum use of each input and expenditure process produced optimally by the Hospital in accordance with existing resources. This suitability includes hospital services, patient care, and the use of available technology to support good care. Therefore, technological resources must be managed efficiently throughout the hospital process to achieve optimal efficiency which is the goal of integrated information system management (Vilcahuamán & Rivas, 2017:159-182).

The hospital's ability to meet the health needs of the community is also supported by functional resources and the availability of technology. This can be achieved by having an integrated Hospital Management Information System, so that the hospital can meet the needs of patient safety through a well-measured level of treatment risk. thus reducing harm to patients, health service providers and local environmental communities.

The complexity of the health service system is a problem that is often faced related to systems such as the referral system from primary health care to complex conditions between general practitioners and other parts of the health system, and the difficulty of the return referral reporting process which is hampered by inadequate information (Bodenheimer, 2008: 1064 -1071). Another system complexity is service fragmentation in the form of differentiation in specialization related to the health system in terms of policy, funding, organizational differences, non-uniform service delivery making the health system more complex (Kodner, 2009: 6-15). Funding also becomes a complexity system, such as poor medical conditions and having comorbid diseases will increase the cost of health services, because there is no clearly conceptualized agreement on the management of complex care which is ineffective and inefficient thereby increasing costs (Valderas et al., 2009: 357 -363).

The complexity of the system is also influenced by innovation in health care, especially innovation in health care technology, with various differences in perception in using technology which can increase the workload for practitioners or reduce the workload, the additional workload is in the form of documentation activities of data input into the system thereby reducing meeting time with patients. and increasing stressors

for health workers (Kuipers, 2011: 25). Meanwhile, according to Greenhalgh (2018), in his research, technological innovation that increases complexity is in the form of technology that fails in the implementation process, and is also partially implemented so that it cannot support health services. With optimal technological support, it can reduce complexity in health services so that it can provide quality health services more efficient.

According to researchers' assumptions, there is a lack of human resources in hospitals can be recruited according to needs, this is related to the Regulation of the Minister of Health of the Republic of Indonesia number 56 of 2014 concerning classification and licensing of hospitals, in article 23 it is stated that the number and qualifications of other health workers and non-health workers as referred to in Article 21 letters d and letters e adapted to hospital service needs (56).

Therefore, the number of personnel requirements and educational qualifications at SIMRS can be adjusted to the needs of the hospital. Apart from that, staff indiscipline is not only caused by individuals, but also by hospital infrastructure. As explained in previous research, if the infrastructure is not good (especially servers) it will take a long time for operators to enter data so that operators get bored and do not complete their tasks properly. Therefore, it is necessary to improve server quality.

Regarding the absence of officers without notification to superiors and lack of discipline in working hours, it is necessary to enforce strict discipline for SIMRS officers/operators so that they can work optimally. To support this, it is necessary to provide rewards for those who are able to improve the quality of work and responsibility, and vice versa, it is necessary to punish those who are undisciplined/neglect their duties. With rewards and punishments, officers will be more optimal in carrying out their responsibilities. Apart from that, to support the quality/competence of officers, the hospital also needs to carry out routine training or require that those who take training outside the hospital have the right to provide outreach to other human resources.

Procedure

From the results of interviews conducted with key informants and triangulation, it shows that there are SPOs that are used as work guidelines and job duties that are in accordance with the job description. In carrying out SIMRS duties there are several sections, such as SIMRS installation staff who are tasked with monitoring operator performance and evaluating each room operator's work, SIMRS programmers who create programs and respond to problems on the SIMRS network, SIMRS operators. Based on document review, observations, in-depth interviews, the same information was obtained, that key informants and triangulation informants knew that there were SPOs as work guidelines and job duties in accordance with job descriptions.

The results of this research illustrate that the majority of informants know about the existence of SPOs in carrying out SIMRS which are useful as a guide or reference for carrying

out tasks or work based on technical, administrative and procedural indicators and documents relating to procedures carried out chronologically to complete a job with the aim of obtaining the most effective work results. The informant knows about the officers' main duties and functions which are the main targets or work assigned to each staff to achieve maximum work results.

Based on document review, observations and in-depth interviews, it was found that there were SOPs and job duties. This is proven by the delivery of information from key informants (head of SIMRS installation, SIMRS staff and SIMRS operators) that the SPOs used as work guidelines and job duties are in accordance with the job description. In carrying out SIMRS duties there are several parts, such as SIMRS installation staff who are tasked with monitoring operator performance and evaluating each room operator's work, SIMRS programmers who create programs and respond to obstacles on the SIMRS network, SIMRS operators who consist of registration counters, medical and inpatient support. However, there are also some rooms where there are no operators, because the provision of computers is not evenly distributed, such as physiotherapy and poly.

SIMRS is a data processing procedure based on information technology which is integrated with manual procedures and other procedures to produce timely and effective information to support the management decision making process, so that in its stages it will create several new SOPs to support the smooth implementation of a neatly organized system and good.

Process orientation can increase competitive ability and improve organizational performance, process orientation depends on the hospital workforce itself so that financial performance can be achieved well, performance innovation based on process orientation really helps hospital professionals become more efficient in providing better quality health care, thereby reducing workload and increasing employee satisfaction in hospitals, thereby improving clinical quality and patient satisfaction, and finally improving hospital finances, so that process orientation has the power to be a way to achieve many organizational goals (Cleven et al., 2016).

Business process management is a field of combination between management and information technology, which involves all necessary resources such as humans, organizations, applications, documents and information sources as material for modeling a business process (Fink & Grimm, 2005: 12). There are four steps in business process management, including identifying business processes, then documenting the process, analyzing and measuring the ongoing process, and finally improving the process. Implementing business process management in hospital organizations can avoid the complexity of health services and focus on business processes to improve the quality of health care (Doosty et al., 2014).

Hospital Management Information Systems are very important in the health industry as supporting specialized health activities and services with a wide scope (Ahmadi et al., 2017). There are many benefits from implementing a Hospital Management Information System contained in previous research, including increasing access to information, increasing

the productivity of health service professionals, increasing the efficiency and accuracy of codes and patient financial billing data, improving the quality of health services, improving clinical management in terms of diagnosis. and patient care, reducing the cost of paper requirements for medical records, minimizing medical errors, increasing patient safety, improving patient care outcomes and increasing patient satisfaction. Of these various benefits, there are the most felt benefits from implementing a Hospital Information System in increasing access to information at home. Pain between health service workers and patients so that service flow is more efficient (Mohammed, 2017).

The implementation of the Hospital Information System provides a clear picture of the relationship between information technology and information processing and the quality of care and patient satisfaction. This has a positive influence both directly and as a complement in improving the quality of care through two hospital performance indicators, namely quality of care and satisfaction. patients (Gardner et al., 2015). Hospital employee satisfaction with the support of information systems makes it easier to understand and implement clinical flow so that employee satisfaction can be achieved which can increase the efficiency of hospital service flow (Schuld et al., 2011).

The appropriate use of medical technology and relevant information technology improves hospital efficiency. This is also influenced by organizational and managerial factors in the hospital. There is a positive relationship between efficiency and use of technology and the ability of hospital directors to manage internal conflicts with a good managerial system that does not conflict with the vision of the hospital itself (Ancarani et al., 2016)

The implementation of a Hospital Information System provides special benefits for health service providers, namely significant improvements in the quality of health care and efficiency of hospitals with components of clinical information systems, clinical research support systems, management information systems, health education support systems, and referral systems to provide care services. health. The clinical information system consists of electronic medical records, image archiving systems, and communication systems that support all clinical activities (Choi, 2010). Utilization of other Hospital Information Systems to allocate resource needs for doctors and other medical personnel appropriately, supported by local regional planning committees, and the quality of hospital performance can be monitored automatically through the National Hospital Information System, this will improve the quality of health services in the country (Shibuya, 2011).

According to the researchers' assumptions, with this SOP there are SIMRS processing activities in accordance with performance targets and the creation of SOPs is able to complement and develop SIMRS according to its objectives so that SIMRS can be used fully. To be able to speed up the connection of services, complete technological requirements such as WiFi and networks are needed. For performance, it can be expected that there will be a division of special responsibilities for SIMRS processing in accordance with internal capabilities managing computerization and it is hoped that there will be an SOP which states that performance must pay attention to SIMRS conditions so that the process activities

run well and according to plan. So you can find out to what extent the process that has been implemented uses a predetermined process and is able to achieve the desired results from the process.

The SIMRS SPO contains regulations that have been set by the government so that the hospital can implement the standards that have been set by the government and gives authority to those in charge to be responsible for SIMRS and fulfill sources of information in fulfilling external regulations by caring and always communicating with the parties involved. concerns external regulations so that Meuraxa Hospital can understand, implement and fulfill the regulations made by the government properly. To be able to carry out the process according to external requirements so that it can move to the next level by being able to know the extent to which the process that has been implemented uses a predetermined process so that it is able to achieve the desired results from that process.

V. CONCLUSION

The conclusions in this research are:

1. The implementation of SIMRS is viewed from the infrastructure theme based on various informants identified in this research. It is evident that from the hardware sub-theme there is still a lack of space for adequate data back-up, there are still not enough computers, and not all polyclinics have printing equipment (printers). Meanwhile, the complaint experienced by patients was the long waiting time in queues, especially during peak patient arrivals at certain times, which was caused by problems in data entry by nurses. Then from the software sub-theme, the software owned by Meuraxa Hospital to operate the Hospital SIM still needs ongoing improvements and capacity increases to meet various data access needs that can be used to support hospital operations and there are still computer units available in large numbers. limited but also problematic when used, requiring maintenance for various computers owned by Meuraxa Hospital. Apart from that, the problem felt by patients, represented by triangulation informants, is that the hospital's SIM does not run optimally when patient visits are high because the server connection is slower than normal times with patients who are not so busy.
2. The implementation of SIMRS is viewed from the theme of human resource tools based on various informants determined in this research. It is proven that from the sub-theme of application use, many SIM users at Mandiri Hospital, Meuraxa Hospital are still not used to using applications provided by the hospital, even though they are useful. as supporting hospital operational activities, it plays a very important role. Then from the data entry sub-theme, the Meuraxa Hospital SIM still needs improvement in terms of its system because various adjustments are still being made. Then, in terms of the time that must be provided to input patient data, there are also limitations, especially when patients are busy visiting.
3. The implementation of SIMRS is viewed from the procedural theme based on various informants determined in this research. It is evident that from the data input sub-theme, it is clear that the Mandiri Hospital SIM still needs

various improvements in its performance to help the operations of Meuraxa Hospital to be more organized, systemized and work optimally.

Research Ethics

Research ethics have been issued by the Chair of the Health Research Ethics Committee (KEPPKN) of the Faculty of Medical Sciences, Syiah Kuala University (USK) with registration number: 1171012P. Ethical Exempted with letter number: 128/EA/FK/2023.

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