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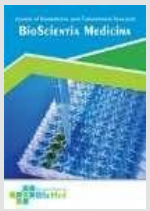

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Strategic Planning for Hospital Management Information System (SIMRS) Dental and Oral Hospital (RSGM) Universitas Andalas (Unand) Indonesia

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A B S T R A C T

In the current information era, hospitals, including dental and oral hospitals, are required to improve performance and competitiveness as a business entity by not reducing the mission it carries. Currently, computer-based management information systems are a very important supporting tool, and it could even be said to be absolutely necessary to support hospital operational management. A hospital management information system, hereinafter abbreviated as SIMRS, is a communication information technology system that processes and integrates the entire flow of hospital service processes in the form of a network of coordination, reporting, and administrative procedures to obtain precise and accurate information and is part of the health information system. Efforts to utilize information systems are a step forward that need to be implemented in the face of very rapid changes, and the impact of the era of globalization is starting to be felt. Having a health information system is very helpful in data processing activities, most of which are carried out using computers that have been programmed with various programs that will handle an application.

1. Introduction

In the current information era, hospitals, including dental and oral hospitals, are required to improve performance and competitiveness as a business entity by not reducing the mission it carries. Hospitals must formulate strategic policies in their internal organization, management, and human resources and must be able to quickly and accurately make decisions to improve the quality of health services to the wider community so that they can become organizations that are responsive, innovative, effective, efficient and of course profitable for the public. capital owners without ignoring their social mission. A hospital management information system (SIMRS) is a computer system that processes and integrates all health service business process flows in the form of a network of coordination, reporting, and administrative procedures to obtain information quickly, precisely, and accurately. Currently, a hospital computer-based management information system (SIMRS) is a very important supporting tool. It could even be said to be absolutely essential for supporting hospital operational management.[1-5]

Universitas Andalas Dental and Oral Hospital (RSGM UNAND) is an academic hospital that is currently used as an educational area for prospective dentists. RSGM UNAND has a vision that is a derivative/elaboration of the vision of Universitas Andalas, namely as an international standard research university that has integration and autonomy in its implementation and development, and also the vision of FKG UNAND, which states that it will become

a leading FKG in the fields of education, research and community service. Based on the results of preliminary research that has been carried out, information was obtained that currently, the recording and reporting system at the RSGM UNAND polyclinic still uses conventional methods. Where all data recording and reporting is done manually and has not been integrated, there are many aspects that can be detrimental to patients, students, and the hospital itself. Manual recording and reporting have several weaknesses, including inaccurate data on the number of patients, card duplication, timeliness in reporting, recapitulation of data in medical records, and matters related to the payment system. The development of this hospital management information system supports services at RSGM UNAND, such as the need to design and build an application that can manage all service data in the hospital, which makes it easier for all hospital parties to manage data archiving, finances, and printing reports that will later provide all data. This is needed as an accountability and annual report for RSGM UNAND.[6-10] This study aimed to present strategic planning for hospital management information systems (SIMRS) RSGM (Dental and Oral Hospital) Universitas Andalas (Unand) Indonesia.

2. Methods

This study is a quantitative descriptive research and uses primary data and secondary data. Primary data was obtained from interviews, where the interview process was carried out by conducting discussions with the Director of RSGM UNAND and the IT staff of RSGM UNAND. The results obtained are information regarding IT in hospitals, identification of problems in the IT field, profile and history of the hospital, tasks of each field in the hospital, as well as analysis of the study of the strengths, weaknesses, opportunities, and challenges of the hospital. Observation, direct observation in the field of several ongoing activities, is carried out to obtain the data needed for making information system strategic planning. This observation took place at RSGM UNAND, which is located at Jalan Perintis Kemerdekaan No. 77 Jati, Padang, West Sumatra, starting from January 2022 to April 2022. Furthermore, this study also conducted a secondary data study, namely, a literature study, where a study of books related to the problem being discussed was carried out. Among them is strategic IS/IT planning by Edwin E. Tozer. In strategic planning, this information system is part of library data.

Tozer's version of this methodological approach is an effort to create information system strategic planning along with a very practical and formal application portfolio per phase with this method, which can provide maximum impact and can unite all supporting aspects in achieving business strategies to increase competitive value. IS/IT (information systems/information technology) strategic planning studies the influence of IS/IT on business performance and contributions to organizations in choosing strategic steps. The advantage of this method is that the strategic planning stages used are divided into several phases where each phase provides input to each other to then formulate a conclusion in the form of a solution for information system strategic planning that contains business and IS/IT strategies for the research object. The following are the stages that the author adapts to the research object according to Tozer's method: Phase 0 - Determining the context and scope (determining the IS/IT scope, external environmental analysis (PESTEL), internal environmental analysis (SWOT, value chain)). Phase 1 – Determine business information and supporting needs (Identification of organizational information, Identification of the vision, mission, and goals of RSGM UNAND, Identification of key success factors, Identification of strategies based on CSF (critical success factors) analysis that are aligned with hospital goals used to determine needs information on each field at RSGM UNAND). Phase 2 – Evaluate the suitability of the system with current business needs and identify solution options (information systems and information technology analysis. At this stage, the IS/IT in each division is currently analyzed, including the hardware, software, and network used. Identify

architectural conditions of Hospital IS/IT. The aim of this activity is to understand the IS/IT architecture using the Mc. Farlan strategic grid method). Phase 3 – Determine strategic solutions (determine the information needs of each field in RSGM, determine strategic solutions for hospital applications and databases, Map the IS strategy for each field in the hospital, and determine hospital IT recommendations). Phase 4 – Prepare and determine implementation plans (setting priority scale, preparing IS/IT implementation plans, presenting computer network implementation plans, and determining proposed management strategies). This activity is the final analysis of the previous phases, which produces application solutions and analyzes migration plans along with the costs used as an investment in developing the IS strategic plan.

3. Results and Discussion

Hospital management information system

The hospital management information system (SIMRS) is a computer system specifically designed to assist in the operational and administrative management of hospitals. The main goal of SIMRS is to increase efficiency, accuracy, and effectiveness in managing all aspects related to hospitals. Following are some of the important components of SIMRS: Patient management: SIMRS helps in managing patient registration, recording medical history treatment schedules, and monitoring patient conditions. This may also include inpatient room management and outpatient care. Inventory management: SIMRS can manage the inventory of various medical equipment, medicines, and other medical materials. This helps in stock monitoring and necessary repurchases. Financial management: This system assists in hospital financial management, including monitoring costs, revenues, payroll of medical and administrative staff, and patient and insurance payments. Human resources management (HR): SIMRS can assist in hospital HR management, including recruitment, training, performance appraisal, and staff administration. Laboratory and Radiology management: This includes monitoring laboratory and radiology test results, as well as integration of medical data into patient records. Schedule Management: SIMRS assists in scheduling doctors, nurses, and other medical staff, as well as monitoring the schedule of operations and other medical procedures. Report management and analysis: This system allows the generation of various reports and analyses required for monitoring and decision-making. This includes financial reports, performance reports, and more. Data security: Given the sensitivity of medical and financial data, SIMRS must have a high level of data security to protect patient and hospital information from unauthorized access. Integration with External systems: SIMRS often needs to be connected to external systems such as health insurance systems, government systems for reporting, and other health service systems. Post-hospital care management: SIMRS can be used to manage patient care after they leave the hospital, including care planning and follow-up. SIMRS can help hospitals increase operational efficiency, improve patient service, reduce medical errors, and manage resources better. Apart from that, the use of SIMRS can also help in long-term monitoring and planning for hospitals.[11-15]

Universitas Andalas Dental and Oral Hospital (RSGM UNAND)

RSGM UNAND is one of the Dental and Oral Hospitals in West Sumatra Province, which is working to develop and improve the level of dental and oral health of the people of West Sumatra. This special dental and oral hospital is located in the center of Padang, which is located at Jalan Perintis Kemerdekaan No.77 Jati. RSGM UNAND has been used as an educational tool for prospective dentists since the end of 2013 and has produced approximately 300 new dentists to date. Since its inception, RSGM UNAND has been a hospital that provides dental and oral health services and is also used as a means of learning, education, and research for the dental health profession and other health workers, which is bound

through collaboration with the Faculty of Dentistry, Universitas Andalas. This hospital has dental emergency facilities, polyclinic dental, inpatient, outpatient, radiology, and specialist dentist services. However, at this time, it is only a polyclinic facility that is already operational, while other facilities are in the process of being operational. RSGM UNAND has 24 specialist dentists and 27 dentists. RSGM UNAND, as a teaching hospital, has the implication that Tri Dharma activities, namely education, research, and community service, must run harmoniously. This hospital has a vision that is a derivative or elaboration of the vision of Universitas Andalas, namely as a University carrying out international standard research that has integration and autonomy in its implementation and development, and also the vision of FKG UNAND, which states that it will be a leading FKG in the fields of education, research, and service. to society.[16-20]

Hospital management information system strategy (SIMRS) RSGM UNAND

Determining the need for information systems (IS/IT) management strategies

The proposed RSGM UNAND hospital management information system (SIMRS) strategy is to form an organizational structure based on information and communication technology (ICT). Formulation of ICT governance at RSGM FKG UNAND and addition (recruitment) of ICT human resources. This is because ICT has become the main management process and driving force for other management processes at RSGM FKG UNAND.

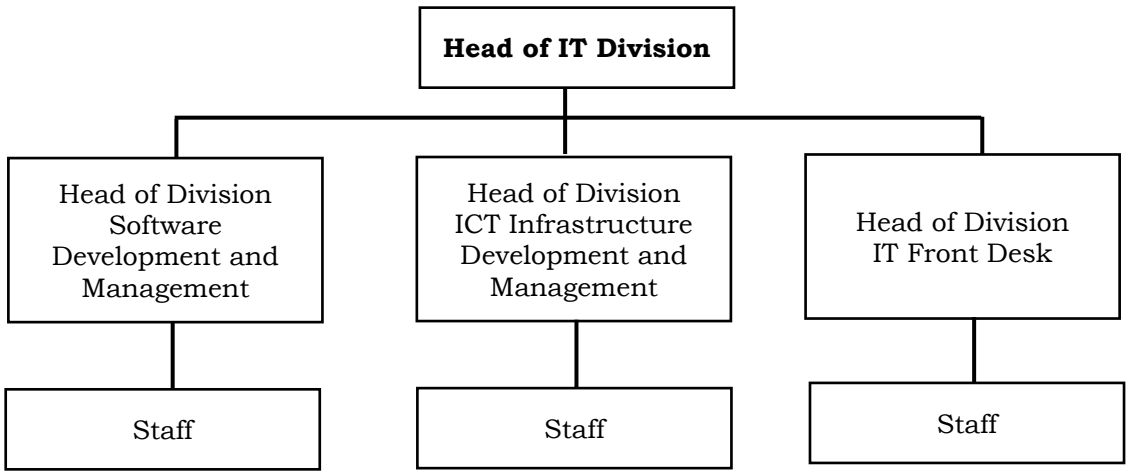


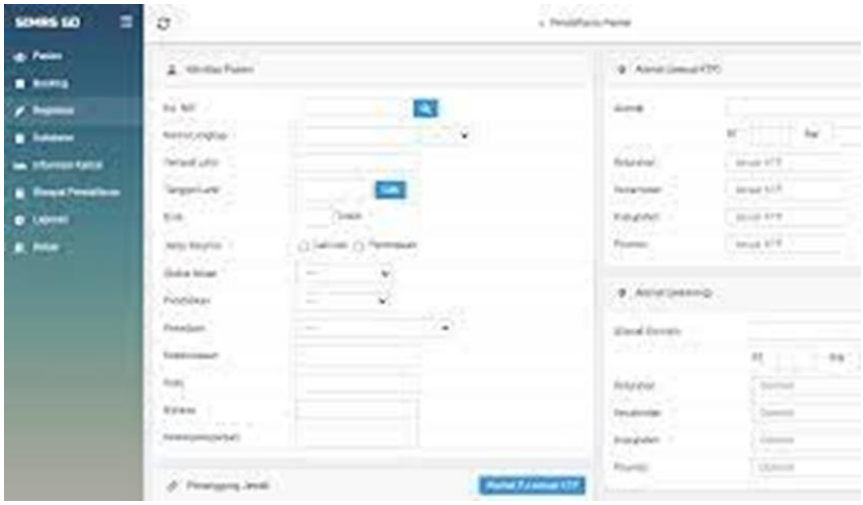
Figure 1. Information technology (IT) organizational structure.

Apart from that, additional personnel are needed to carry out various activities related to information technology (IT). Currently, there are 2 (two) ICT human resources, all of whom are support staff. Based on the proposed changes to the organizational structure above, a minimum of 10 people are needed as human resources in the IT division (1 division head, 3 section heads, 6 staff).

Determining application strategy solutions and RSGM FKG UNAND database

Application strategies and databases that can be used for SIMRS FKG UNAND include:

SIMRS GO Version 2 Ministry of Health



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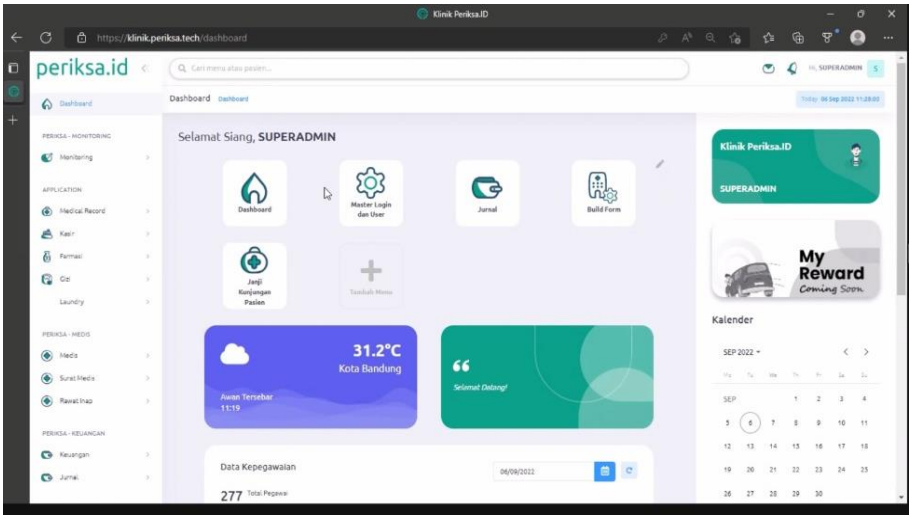

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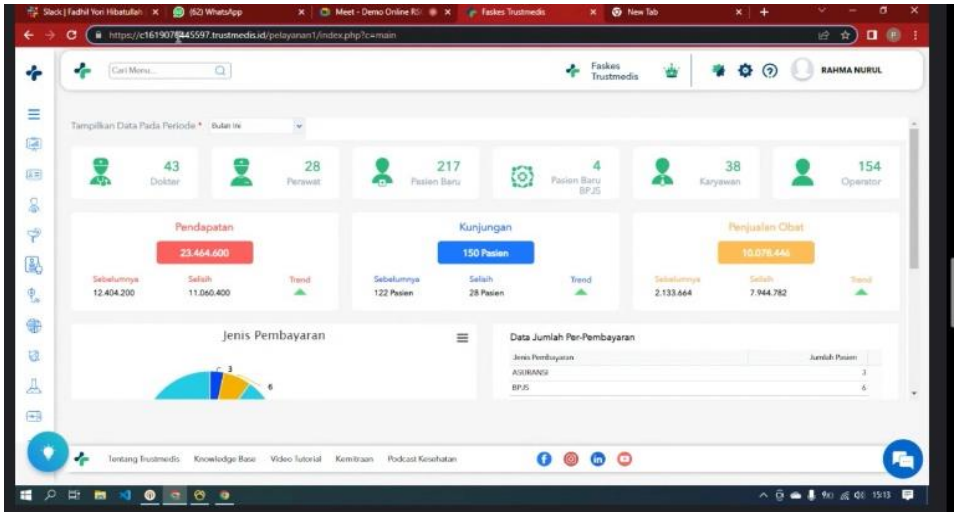

Operational development strategy for hospital management information systems (SIMRS) The proposed UNAND RSGM for the 2023-2026 period can be seen in Table 1.

Table 1. Development strategy of SIMRS RSGM FKG UNAND

Application name/type	Status
Academic clinic management information system	Built
Professional program academy information systems	Built
Planning information system	Built
Internal monitoring information system	Built
Financial information system	Built
Quality control information system (quality management system/QMS)	Built
Microsoft office visio	Built
Document management system	Built
RSGM FKG Usakti website	Built
Image processing application	Built
Knowledge management system (KMS)	Built
Central lab information system	Built
Word processing application	Built
Worksheet processing application	Built

Table 2. Roadmap for the development of SIMRS RSGM UNAND.

Application	Year 1	Year 2	Year 3	Year 4
Management information system				
Professional program academic information system				
Planning information system				
Internal monitoring information system				
Academic management information system				
Financial information system				
Quality control information system (quality management system/QMS)				
Microsoft office visio				
Document management system				
RSGM UNAND website				
Image processing application				
Knowledge management system (KMS)				
Central lab information system				
Word processing application				
Worksheet processing application				

4. Conclusion

The conclusion based on the research results is: (1) Procurement and utilization of hospital SIMRS will be able to overcome problems that are currently occurring, such as being able to replace manual data recording and processing systems with computerized ones, data duplication, human error, presentation of information content and data integration between fields in the hospital through the development of an inter-sector information system. field at RSGM

UNAND, integrated database management, and website and mobile application content management. Through the portfolio discussed previously, there are also proposals for additional fields in the structure. Hospital management is expected to focus on developing SIMRS within the scope of RSGM UNAND and clearly explain the main tasks and functions of the information technology division. (2) SIMRS portfolio implemented to make it easier for management to develop the vision, mission, and organizational goals for the short and long term of the hospital and can be recommended by the hospital director to the rector/university as the basis for the hospital's strategic plan for later review and approval. (3) From the results of the SIMRS RSGM UNAND strategic planning design, the formulation of the vision, mission, and goals related to SIMRS, the formation of an organizational structure for the future, and the formulation of application needs in the form of an application portfolio can be produced. Planning The SIMRS strategy can also produce new opportunities that can be exploited by hospitals that aim to increase the competitive value of RSGM UNAND to become an integrated dental and oral health service center in West Sumatra. (4) In terms of further research aspects, the results of the analysis from this portfolio can be used as a reference in evaluating future SIMRS development by various parties, and the implementation of SIMRS RSGM UNAND can be a benchmark for implementing technology in community services in West Sumatra, especially in health facilities.

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