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The role of database systems in hospital services

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Abstract

The hospital as an institution that provides health services for the community, in its management there is a lot of data and information that flows during the service process. To ensure that data can be processed properly so as to produce useful, precise and accurate information and can be accessed by all parties involved in providing good health services, information and communication technology infrastructure assistance is needed, known as hospital information systems.

This paper discusses the benefits and roles of hospital information systems in improving health services for the community. This paper is also expected to provide input for all hospital stakeholders such as: hospital managers, doctors, medics, patients seeking hospital services, and the government about the importance of developing an information system to help improve the quality of health services.

Keywords: SIMRS, Information Management, Hospital Services

1. Introduction

In this information age, hospitals are required to improve their performance and competitiveness as business entities without reducing their social mission. Hospitals must formulate strategic policies on internal organizations, 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 owners. Capital without neglecting its social mission. Hospital Management Information System is a computer system that processes and integrates the entire flow of health care business processes in the form of a network of coordination, reporting and administrative procedures to obtain information quickly, precisely and accurately. Currently, the hospital computer-based Management Information System (SIM) is a very important supporting facility, it can even be said to be absolutely necessary to support the operational management of hospitals. Various hospitals that still persist in using conventional administrative systems have shown many lost opportunities to earn profits. As a result of weak coordination between departments and lack of support for fast, precise, accurate, and integrated information. This of course will affect the quality of services provided to stakeholders, especially patients. These hospitals generally lag behind in competition with hospitals that use SIMRS. For example, in the conventional administrative system, the recording of treatment costs in the finance department is collected in stages starting from the ward, the ward has not been able to make a cost calculation because it is waiting for information on drug prices to be given to patients from the pharmacy, the ward is also waiting for information on cost records from the laboratory, if there is a guarantee of money paid to the cashier must also wait for the validity of the data, and so on so that patients who will make payments at the end of treatment have to wait for a long time. Not to mention that there is an element of subjectivity in the calculations carried out by each room because there is a hospital that gives the authority to the head of the room to estimate the patient's own level of ability and how many treatments or medicines are not billed to the patient. The condition of giving a discount in each of these rooms will clearly have unfavorable consequences, where hospital income is reduced and incentives for medical services are cut unilaterally which will eventually lead to a double standard of care.

2. Literature review

The information system aims to ease the administrative burden, both from the large pile of paper, the length of the process and the difficulty of calculations. We often feel in the payment of patient fees going home where the speed of processing and accuracy takes a long time if the implementation is still using a manual pattern, imagine if every day, a hospital still uses the manual method, how much time and cost is spent to complete 1 bill receipt patient. The hospital technology revolution specifically for information systems has existed since 1994. The use of information technology in hospitals starts from the Billing System which can only provide data on payments to the latest Open Source Generic-based Hospital Information System launched by the Ministry of Health.

The implementation of SIMRS in hospitals is a mandate where the hospital provisions state that hospitals are required to record and report all hospital operations in the form of a hospital management information system, this is confirmed by the Regulation of the Minister of Health of the Republic of Indonesia concerning Hospital Information Systems. The Information System is part of the implementation efficiency process related to recording, calculation and reporting. The system will be more and more needed when the hospital gets bigger, the more patients and the more administrative processes are needed.

3. Methods

The method used is a literature study. This technique is carried out with the aim of revealing various theories that are relevant to the problems being faced/researched as reference material in the discussion of research results. Literature study is looking for theoretical references that are relevant to the cases or problems found. In general, Literature Study is a way to solve problems by tracing the sources of writings that have been written before. Journal search method using google scholar. The keywords used in the journal search are management information systems in hospitals". The journals used are limited from 2015-2021. The journals used in the literature review were obtained from various research journals including the Medical Journal Jurnal

4. Result and discussion

4.1 Administration information system

Administrative information system is an information system that plays a role in the administrative process. The administrative process here is the process of taking notes, calculations and correspondence. The administrative process in a hospital usually includes:

1. Hospital finances, both from the patient and for the benefit of the hospital.
2. Staffing.
3. Patient admission.
4. Other general administration.
 - a. This information system was developed to make the process easier, reduce the workload, reduce the amount of paper and speed up the process with several characteristics, including: Handling records, administrative information systems try to handle increasingly complex and complex records such as billing for patients, because of the number of services, the more complicated and long, on the other hand the patient needs speed.
 - b. Handling calculations, such as the number of goods circulating in hospitals, there are very many types and quantities, monitoring drug stock will be a problem, then the information system will help the calculation quickly.
 - c. Handling archiving, the existence of stacked archives of papers can be reduced by the existence of an administrative information system so that it will save space and paper. Utilization of administrative information systems at the implementation stage such as finance (managing accounts payable and receivables, cost accounting, Budget Comparisons and Inventory, staffing and patient acceptance. It will significantly benefit the ease of the process, reduce workload, reduce the use of paper and stacks of archives as well as speed up the process). This process will provide hospital efficiency in terms of cost, time and governance patterns.

4.2 Clinical Information System

This system is a direct interaction between patients and health workers (doctors, nurses, midwives and medical support personnel). In general, the concept of a clinical information system is an interaction between patients and health workers in the context of service. This concept has existed for a long time where everything is done manually, with notes and memories such as doctor notes on patient status sheets, there are 3 important components in the implementation of clinical information systems, namely users consisting of doctors, nurses and other health workers, the system used and the output for patient's interests. Clinical information systems are similar to administrative information systems, where the difference is in the data used, clinical information systems will be related to increasing service effectiveness and improving service quality, especially aspects that are written in nature, repetitive activities, data searches and data linkages will be very important. accelerated and simplified. A good clinical information system will pay attention to several components that are directly related to patients or not, such as effectiveness, efficiency, quality improvement and achievement of expectations, these components are not directly related to patients. Patient information, doctor's information, doctor's ability are components that are directly related to patients and are the basis of the applied clinical information system. Clinical information systems related to direct components, especially aspects of data confidentiality, data security must be considered. The clinical information system is very much determined by the cooperation of various related parties so that the factors that can encourage and can inhibit can be resolved together, including those related to services, related to systems, related to time, related to utilization so that gradually continuous improvements can be made. Several driving factors Successes such as conceptual clarity, support, focus, assertiveness and communication are the keys to success in its implementation. The clinical information system must receive attention in terms of the schedule, which comes first and linkages with other processes, the ranks of doctors and nurses as well as adjustments between data and writing.

4.3 Management information System

Management information system is a new thing, hospitals in Indonesia are competing to make management information system applications either developed by themselves or through vendors. The Ministry of Health through the Regulation of the Minister of Health Number 1171/MENKES/PER/VI/2011, regarding SIMRS explains that the management information system is an integral part of the SIMRS as a whole, there is an assumption that the management information system must be computerized even though it can be done manually. just because administrative and clinical information systems are made computerized, most hospitals in Indonesia combine it with a Local Area Network. Some big hospitals in Indonesia such as RSCM and Sardjito make complex management application systems, this is very good and there are no problems, but for hospitals that are just developing their IT systems, it is necessary to sort out what information is needed according to the conditions and capabilities of the hospital.

There are several important things that need to be considered in this management information system:

- a. Procurement of the information system whether as a whole or each part.
- b. In order to transfer information, does it have to be related to the whole or to each particular area.

- c. Who are the officers who may use it, to what extent is the confidentiality of the data.
- d. The management information system aims to determine long-term goals and plans, service needs and provision, human resource allocation and financing matrix, performance appraisal, quality control and program evaluation. The rapidly changing hospital environment requires reliable information that can be used for long-term planning so as to produce breakthroughs that are in accordance with the needs of the community so as to avoid budget wastage.

5. Conclusion

The hospital management information system is a system that is very helpful in managing services in hospitals, this system of course has limitations, such as if the input data is wrong, the information generated will be wrong as well. Specific limitations such as technological limitations, limited funding, factors outside the hospital, limited concepts and limited understanding are limitations part of the things that must be considered in developing a system. Good infrastructure, high technology needs to be supported by reliable human resources. As it is known that computerization cannot be developed properly without the development of manual systems, information systems are based on good manuals, so if you want the computerized system to run well, tidy up the manual system first.

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