MEDICAL SUPPORT RESULT COMPLETENESS OF AN INFORMATION SYSTEM DESIGN FOR COVID-19 PATIENTS AFTER BEING HOSPITALIZED BASED ON VISUAL STUDIO 2010

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Abstract

This study aims To explain the medical support result completeness of an information system design for covid-19 patients after being hospitalized The research method used is a descriptive method by conducting observations, interviews, and literature review. The software method used is the Waterfall development method. From the results of this study, the following problems were found: The process of recording the completeness of the information system for the results of medical support for Covid-19 patients still in manual method so that the recording gets to be less successful, the time wasteful in recording since it still employments the manual method, the difficulty in making a completeness report because the completeness of the medical support results are written randomly, the identity of the medical support result is often not in accordance with what is proposed. Therefore, the researchers designed an information system for the completeness of the results of medical support for covid-19 patients after being hospitalized using Microsoft Visual Studio 2010 to make it easier for officers to process the completeness of medical support results.

Keywords : Design, Medical Support Results & Microsoft Visual Studio 2010

PENDAHULUAN

Along with the times, technological developments are also experiencing very rapid development, this has been proven by many of us who have taken advantage of these technological advances as daily activities. With this present day and progressively advanced innovation, numerous companies and other offices have started to move from manual frameworks to presently switch to utilizing progressively advanced innovation. By utilizing technology can be a support to complete the work to be more accurate and more efficient. Now technology is divided into several types and several systems, one of which is information system technology where the data that has been collected will be processed into information.

Information systems have an important role in the progress of companies and other agencies, with the support of a good information system, an agency can have a competitive advantage, one of which is in hospital institutions, which are now almost all hospitals in Indonesia and the world's systems are starting to move using technology that more modern.

Hospital is a health service institution that provides complete health services that provide inpatient, outpatient, and emergency services (Undang-undang Republik Indonesia nomor 44 tahun 2009 tentang rumah sakit). In hospitals, services to patients are divided into two forms of service, one of which is medical and non-medical services. Medical record service is one form of service that is included in the form of non-medical services in hospitals.

The medical record information system is a form of hospital management information system that plays an important role in

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improving the quality of hospital services in several aspects such as administration, law, finance, documentation, research and education (Adnur, 2013) computerized medical system can reduce errors in data input, therefore the use of a medical record information system in a hospital is very important to support services to patients.

In the field of medical services, the application of technology has developed rapidly, such as ECG, USG, X-ray, and others. But this is inversely proportional to the application of information technology in terms of non-medical services in hospitals. There are still many hospitals in terms of data processing still manually, not computerized (Saputra, 2011)

From the results of research at Hospital X, the medical record information system in the data processing section of the completeness of the results of medical support for Covid-19 patients after being hospitalized still uses a manual system, namely by writing some incomplete medical support results on paper with a certain format, then incomplete notes. The medical support is stored on the shelf of the data processing officer until the results of the medical support for Covid-19 patients after being hospitalized have been completed.

With manual recording, of course, there are regularly inadequate composing of therapeutic underpins is composed arbitrarily, there's an contradiction of the character of the patient's medical support being submitted so that the information handling officer must modify the incomplete information that is submitted. Of course, it will take time to complete the medical support for Covid-19 patients after being hospitalized.

Previous research was conducted by (Maulana, 2016) with the title the influence of the quality of medical, paramedical, and medical support services on inpatient satisfaction. The problem discussed in this study is to find out the influence of the quality of medical, paramedical, and medical support services on the satisfaction of inpatients at the Harapan Banda Aceh Hospital.

Based on the above conditions, the design of an information system for the completeness of the results of medical support for Covid-19 patients after hospitalization is expected to assist and facilitate data processing officers in collecting data on the completeness of the results of the medical support.

The purpose of this research is to design an information system for medical support for COVID-19 patients after hospitalization using Microsoft Visual Studio 2010

LITERATURE REVIEW

System design is an activity to design and determine how to process information systems from the results of system analysis so that they can meet the needs of users including designing user interfaces, data and process activities (James A. O'Brien, 2009)

According to (Sutabri, 2012:38) in the book "Analysis of Information Systems", defines an information system as a system within an organization that brings together the daily transaction processing needs, supports operations, is managerial and strategic activities of an organization that provides certain outside parties with the required reports. While the information system according to (Taufiq, 2013:17) in the book "management information system", defines an information system as a collection of the most integrated and collaborative sub-systems to solve certain problems by processing data with a tool called a computer so that it has added value. and useful for users.

Microsoft Visual Studio is a complete software (Suite) that can be used to develop applications, be it business applications, personal applications, or application components, in the form of console applications, window applications, or web applications. Visual studio includes a compiler, SDK, Integrated Development Environment

(IDE), and documentation (usually the MSDN Library).

Medical record is a file that contains notes and documents about the patient's identity, examination results, treatment that has been given (INDONESIA and 269/MENKES/PER/III/2008). In the medical record service all files must be filled out completely. as in medical support, the results of various medical supports of course must be complete because with the completeness of medical support, it can certainly make the examination of patients to be maximal.

RESEARCH METHOD

This research method is done by means of descriptive research. The data collection technique uses observation to determine the completeness of the results of medical support for Covid-19 patients after returning from hospitalization, then by interviewing several medical record officers concerned so that the problem of incomplete medical support results is more detailed, and the last is Literature Review or searching for some basics. theories from several books and also the internet to support research.

3.1 System Development Analysis

For the analysis that researchers use is the development of the waterfall model, because by using the development of the waterfall or waterfall model, the process is regular and also sequentially step by step so that it will not cause repetition in the development process.

This method is called the waterfall method because the steps taken must be done one by one and must not pass through several sequential stages, therefore it is called the waterfall method.

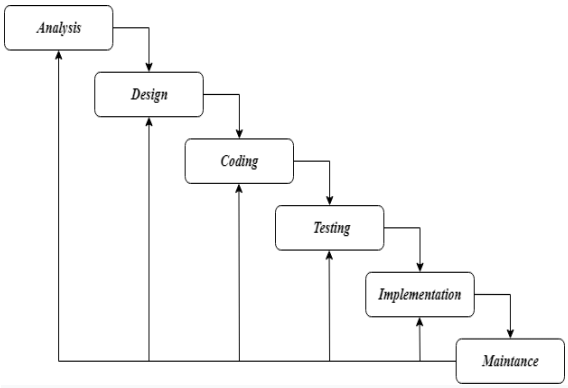

Figure 1. Waterfall Model

Judging from Figure 1, which is a sequence of stages of the waterfall method, as for an explanation of the stages, they are as follows:

a. Analysis of needs

At this stage, an analysis of what needs are needed in designing a complete system of medical support results for Covid-19 patients after returning home from hospitalization.

b. System Design

At this stage, data design, data structure, detailed procedures, and interfaces are carried out

c. Coding or Code generation

At this stage the system design that has been made is translated or coded into a programming language using Microsoft Visual Studio 2010.

d. System testing

At this stage testing or system testing of the information system design that has been made, this test is carried out to ensure whether the information system design is running well and does not experience errors so that if it is still not as desired and has errors, it can be corrected again until it is in accordance with the results obtained. desired.

e. Implementation

Implementation is carried out after the design is declared as desired, this ensures that the design is running well and smoothly

f. Maintenance

At this stage is the last stage in the waterfall method or waterfall at this stage the design of the information system can be used and at this stage of treatment at the same time correcting errors that were not detected in the previous stage.

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RESULTS AND DISCUSSION

System Design

a. Flow chart

Flowcharts or flow charts are symbols that describe a sequence of processes and the relationship between a process and other processes that are connected through arrows in solving a problem.

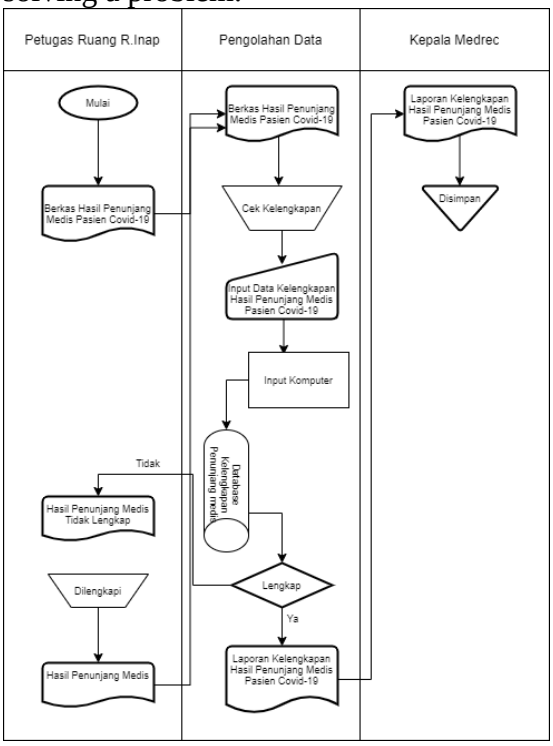

Figure 2. Flowchart of the completeness system of medical support results

b. Context Diagram

Context diagram is a small picture of a process, this diagram is usually used to set a boundary on a system.

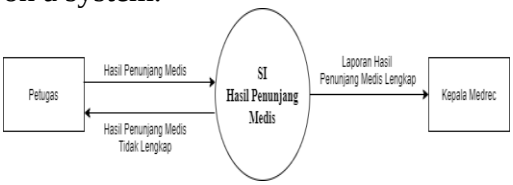

Figure 3. Context Diagram of the Completeness of Medical Support Results Information System

c. Data Flow Diagrams (DFD)

Data flow diagram is a diagram that describes the process flow of input and output of a system, this diagram focuses more on how the information, goals and data ends

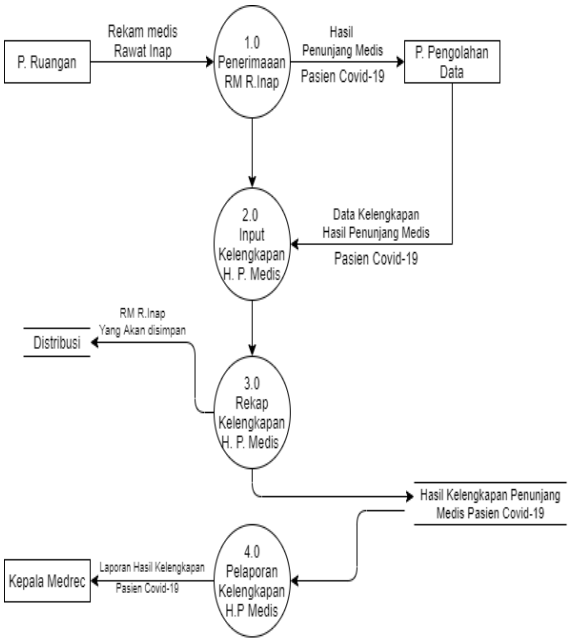

Figure 4. DFD Information System Completeness of Medical Support Results

d. Entity Relationship Diagram (ERD)

Entity relationship diagram is a diagram that describes the description of the relationships between data entities or document relationships so that they become more structured when they are used.

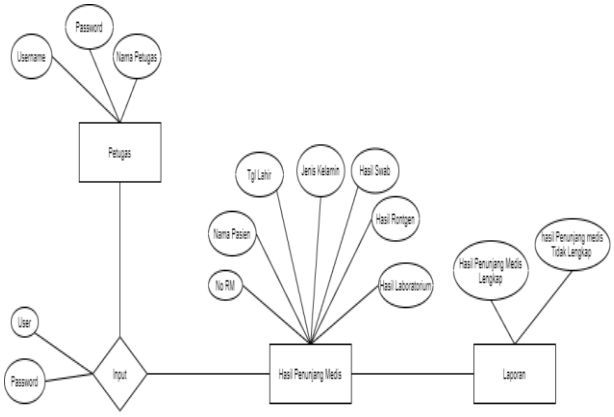

Figure 5. ERD Information System Completeness of Medical Support Results

System Implementation

The design of the information system that is designed is an overview or interface of a process of using the system, as for some of the interface design displays for the completeness of the results of medical support for Covid-19 patients after being hospitalized as follows:

a. Login Page View

Figure 6. Login Display

In this screen, before the officer can access this information system, the officer is required to fill in the Username (Filled in with the officer's name) then enter the password (Fill in with a number or number) to then be able to continue on the main page.

b. Main Menu Display

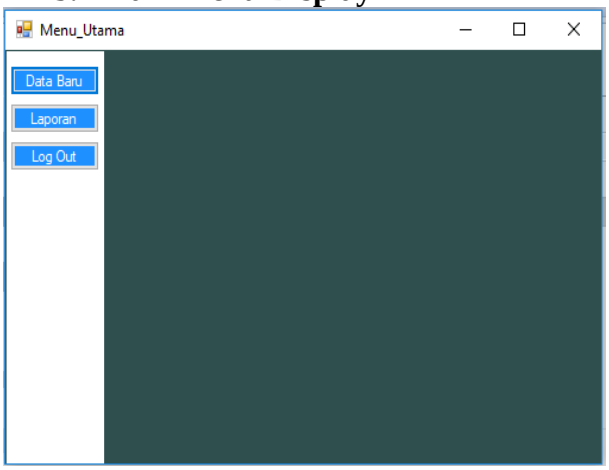

Figure 7. Main Menu Display

In the main menu display, there are several accesses, There are new data, reports, and logout, if the officer will create data for the completeness of new medical support results, the officer just selects the new data menu, the system will automatically move to the desired page, the report menu functions to displaying some data on the completeness of medical support results such as complete and incomplete medical support results data, if you have finished doing input, the officer just clicks on the Logout feature, the system will exit automatically.

c. New Data Display

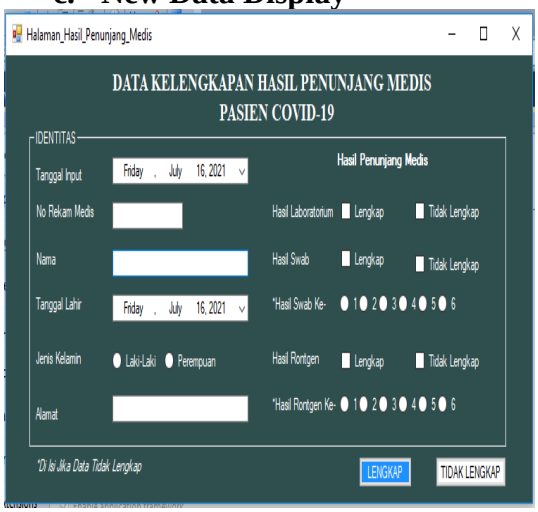

Figure 8. New Data Display

In this view, there are several features of filling out the completeness of the medical support results by inputting the officer to adjust it to the existing data, if the officer finishes filling in the data, then all you have to do is choose whether the medical support results are complete or incomplete and then the data is entered into the completeness report.

d. Report View

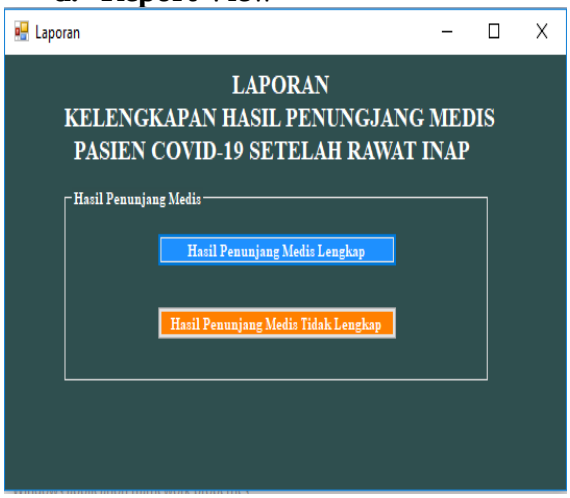

Figure 9. Report Display

In the report display, there are two features, namely complete medical support results reports and incomplete medical support results, with this the officer will easily see the complete medical support results data.

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e. Display of Data Completeness of Medical Support Results

LAPORAN HASIL PENUNJANG MEDIS PASIEN COVID-19 LENGKAP

Tanggal Input	No RM	Nama	Tanggal Lahir	Jenis Kelamin	Alamat	Hasil Laboratorium	Hasil Swab	Hasil Rontgen
1/1/2021	123456	ALDI	8/8/2000	LAKI-LAKI	BANDUNG	Lengkap	Lengkap	Lengkap

Figure 10. Complete Medical Supporting Data

LAPORAN HASIL PENUNJANG MEDIS PASIEN COVID-19 TIDAK LENGKAP

Tanggal Input	No RM	Nama	Tanggal Lahir	Jenis Kelamin	Alamat	Hasil Laboratorium	Hasil Swab	Hasil Swab ke	Hasil Rontgen	Hasil Rontgen Ke
1/1/2021	123456	ALDI	8/8/2000	LAKI-LAKI	BANDUNG	LENGKAP	Tidak Lengkap	1,2,3	Tidak Lengkap	2,3

Figure 11. Incomplete Medical Support Results Data

In this view, the system will display data on the results of medical support for Covid-19 patients after hospitalization, with this data it will make it easier for officers to make reports to be forwarded to the head of the medical record.

CONCLUSION AND SUGGESTIONS

Conclusion

Based on the results of the research and discussion above, the following conclusions can be drawn:

The information system process for the completeness of the results of medical support for Covid-19 patients after being hospitalized at hospital x still uses the manual method so that its implementation is less effective.

The problems that occur have resulted in several problems such as time inefficient, difficulty in reporting, and identity incompatibility.

Suggestions

Efforts were made to overcome the problems that occurred, the researchers proposed to make an information system program for the completeness of medical support results with the aim of easing the workload of officers, facilitating the process of checking the completeness of medical support results using Microsoft Visual Studio 2010.

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