MEDICAL RECORD DIGITALIZATION DESIGN OF NATURAL DISASTERS PATIENTS AT DISASTER-PRONE HOSPITAL

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ABSTRACT

This study aims to design medical record digitalization design of natural disasters patients in hospitals that handles a lot of victims of natural disasters. The North Lombok district hospital as one of the hospitals that deal with victims of earthquakes and other natural disasters in 2018 found inaccurate data processing and Insufficient storage of natural disaster patient medical records because the level of complexity and data fulfillment in short time is needed in these conditions. It is expected that the system development design can produce calculations and data delivery that work faster and more accurately to speed up and simplify the process of managing natural disaster patient data starting from registering natural disaster patients, assessments, and reporting natural disaster patients on web-based. The author used CI (codeigniter) as a framework for system development. The results of this study are scores testing the usability aspect by using the use questioner instrument to users which can be concluded that the design of web-based electronic medical records for natural disasters patients got 80.8% usability standard or can be classified as "Good".

Keywords: natural disaster patients, triage, digitization of codeigniter medical records, North Lombok district hospital.

INTRODUCTION

Natural disaster medical record is a collection of facts and records regarding the identity of a disaster patient, where the victim was found, the number of the disaster patient and the identity of the person who discovered the disaster victim [17]. Based on the observations and interviews of the authors in November 2018 at the North Lombok District General Hospital in the special services of natural disasters, it was found that on August 5, 2018 to August 28, 2018 there were 1309 medical records of natural disaster patients and 447 or 34.1% known medical records of natural disasters were not found because of inadequate placement and storage of medical records, medical records of natural disaster patients were not completely filled because officers did not use natural disaster medical records but used memo books and only contained name and address data.

In the North Lombok District General Hospital has not yet used the system in managing medical records of natural disaster patients which has an impact in processing patient data, this will affect the accuracy of medical records, the handling of natural disaster patients, further patient visits if the patient wants control and the safety and authenticity of the data can be questioned. To overcome this problem, it is necessary to develop a system with a level of calculation and data delivery that works faster and more accurately so as to speed up and simplify the process of managing patient data.

The system those who can access are administrative officers, medical records officers, and doctors. The process includes patient registration, patient examination, identification of patients who need immediate stabilization (field care) and identifying patients who are only saved by emergency surgery (life-saving surgery). So that later this system can produce reports on the number of natural disaster patients, patient data reports based on emergency categories and reports on patient diagnosis results.

Based on the problem above, the writer makes a design of a Web-Based Electronic Medical Record for Natural Disaster Patients at the North Lombok District General Hospital.

METHODS

The authors designed the system based on the concept of System Development Life Cycle (SDLC). Data collection methods used observation, interviews and literature study. The system development method used the waterfall model, which was a classic model that was simple, structured and linear in which the process flows in a scenential way from beginning to end.
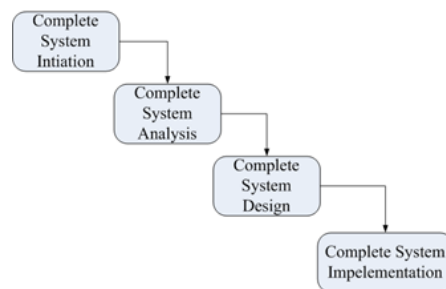

Figure 1. The Squential or Waterfall Strategy

Context Diagram

Context diagram is the top diagram of an information system that describes the processes that occur in the system in the form of a data flow diagram (DAD). To provide various information, the stages of the process will be explained through the depiction of context diagrams.
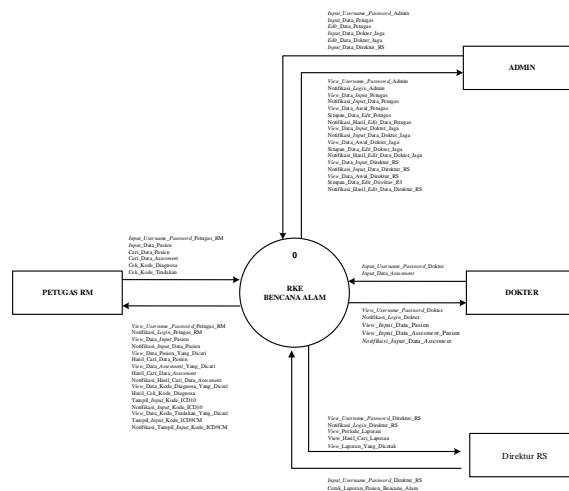

Figure 2. Context Diagram

DFD Level 0

DFD Level 0 describes several processes of data flow into and out of the database. DFD Level 0 can be seen in the following image
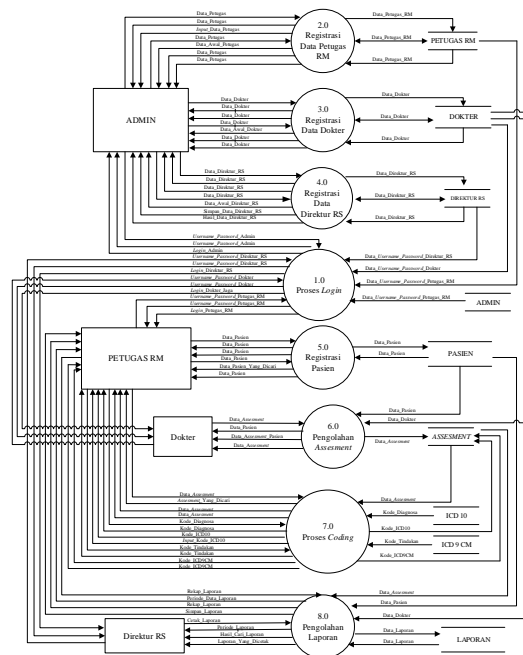
Figure 2. DFD Level 0

Entity Relationship Diagram (ERD)

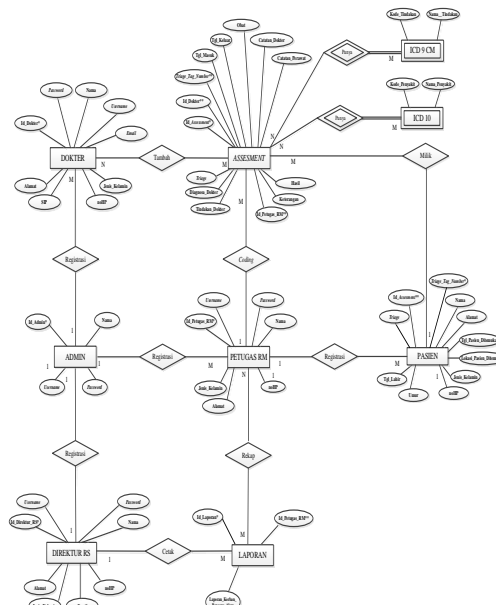ERD Diagrams list of all entities along with the attributes of each entity related as follows.

Figure 3. Entity Relationship Diagram (ERD)

System Requirements Analysis

Functional system requirements were input, process and output. While the non-functional system requirements were hardware in the form of an Intel Core i3 laptop, 1.6 GHz processor, 2 GB memory, 500 GB hard drive, 64 bite system type, Mouse and Keyboard as input devices and printers as output devices. While the Software Requirements were Microsoft Windows (XP, Vista, 7, 8, 10), Web Browser (Mozilla Firefox, Chrome), XAMPP as a database server and Apache as a web server, Adobe

Dreamweaver CS6 as a Web editor, CI (codeigniter) as framework for system development.

System Architecture

System Architecture designed the user logs into the system and the system confirms the results of the login to the user, Patient Registration, Assessment which displayed the results of the patient assessment and emergency categories, printed reports of natural disaster patients. The design of the electronic medical record information system interface used a pulldown menu that consisted of menu bars that can be selected by moving the cursor left and right.

Research Samples

The population of this study was the medical records officer at the North Lombok District General Hospital which used probability sampling techniques with simple random sampling using the Slovin formula [23]. The instrument to testing usability aspects used the USE Questionare instrument with assessment criteria used a Likert scale [19].

SYSTEM IMPLEMENTATION
Login Page Display

The login page can be accessed via address http: //localhost/medical/login in a web browser, the portal login page will appear, then the user (Medical record officer, admin, doctor and hospital director) will log in by entering the user name and password.
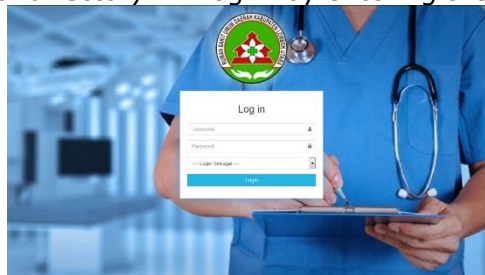
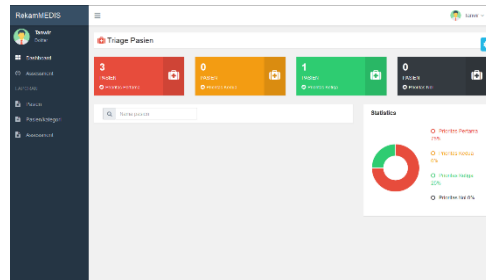**Figure 4. Login Page Display**

Admin Page Display

In this menu the admin can search, add data, edit director data, Medical record officer data, doctor data, and admin data.
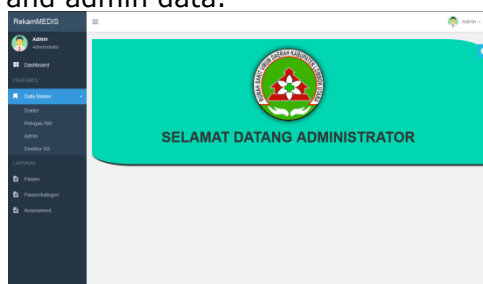
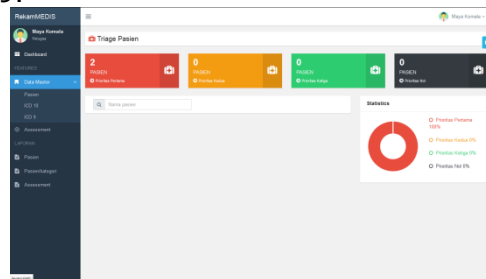**Figure 5. Admin Page Display**

Doctor's Page Display

In this menu, doctors can search, add data and edit data assessments.

Figure 6. Doctor's Page Display
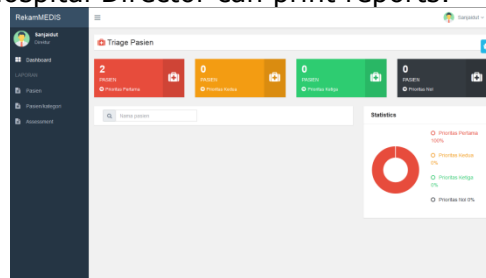
Medical Record Officer Page Display

On this menu Medical record officers can search, add data, edit patient data, Report and Coding ICD 10, ICD 9.

Figure 7. Medical record officer Page Display

Hospital Director Page Display

On this menu the Hospital Director can print reports.

Figure 8. Hospital Director Page Display

System Testing

System testing used the blackbox method with open system testing, testing the login page, testing the admin menu page, testing the officer page, testing the doctor page and testing the director page running in accordance with DFD.

Usabillity Testing

Usabillity testing is carried out directly to 5 (five) officers by trying a web-based electronic medical record system for natural disaster patients and the total score obtained is 606 with a Feasibility Percentage of 80.8%, it can be concluded that it meets the usability standards obtained "Good".

CONCLUSION

This research succeeded in making the design of electronic medical records for patient registration pliers including Triage Tag Number (temporary disaster medical record number), Patient Triage Information (red category: first priority, yellow category: second priority, green category: third priority, black category: priority 0 or died), patient identity, date the patient was found, patient location was found, type of natural disaster, and introductory identity. assessment (assessment) of natural disaster patients include

Date of entry, Date of discharge, Doctor Data, ICD Code 10, ICD Code 9, Name of Drug, Doctor's note, Nurse's record, Result of diagnosis and Remarks. Reporting natural disaster patients in the form of natural disaster patient data reports, patient data reports based on emergency categories and assessment report. It is necessary to develop a system that is integrated into all units in the hospital as well as relevant authorities in handling natural disasters in order to facilitate patients and officials in providing and receiving health services.

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