DESICION SUPPORT SYSTEM FOR DECISION MEASLES AND RUBELLA DISEASES IN PUBLIC HOSPITALS THE DR RASIDIN PADANG REGION USES THE METHOD ANDROID BASES FORWORD CHAINING

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Abstract: Measles and rubella are infectious diseases that are often identified in Dr.Rasidin, Padang. To Facilitate the prosess of diagnosis and decision making in treating there disaeses, an efficient decision support system is needed. Thiss research proposes the development of a Decision Support System for Determining Measles and Rubella at the Dr. Regional General Hospital. Rasidin, Padang, uses an Android based forward chaining method. This system is designed to help medical personnel diagnose measles and rubella more effectively. Through the implementation of forward chaining, the system will analyze the symptoms found in patients and provide recomendations for diagnosis and appropriate treatmenr steps. It is hoped that the results of this research will increase the efficiency of the process of diagnosing and treating measles and rubella at this hospital, as well as providing significant benefits for patients.

INTRODUCTION

Decision Support System (Decision Support System) for Measles and Rubella at Dr. General Hospital. Rasidin padang Region using Android Forward Chaining Based Method : Measles and rubella are two serius infectious diseases, and they can pose segnificant health threats if not treated appropriately. To overcome this problem, Dr. General Hospiital. Rasidib in the Padang Rregion needs to heve a decision support system that can help medical peronnel and management in managing and controlling this disease.

The background to developing a decision support system for measles and rubella in this hospital is to increase efficiency in clinical decision making, reduce the time required for diagnosis and treatment, and provide better support to medical personnel in managing cases of this disease.

Bases on technological advences, the forward chaining method implemented in this system provides a precise approach in analyzing symptoms, identifying cases, and

evuluating treatment options. Forward chaining is an approach in which a system searches for input data, identifies problems, and produces recommendation or solution bases on the platform uses to run this decision support system, allowing easy and fast access by medical personnel in the field.

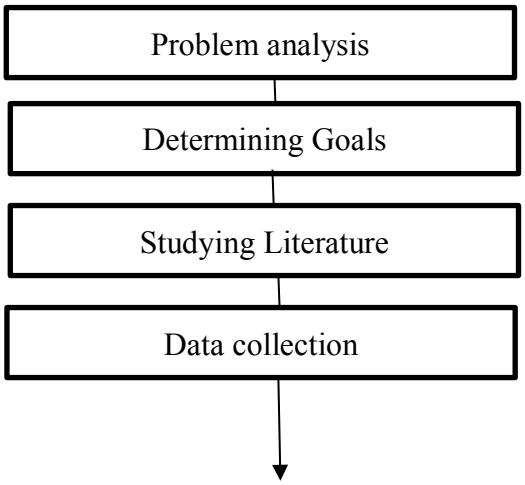
Some of the main reasons for developing this decision support system are :

1. Improved Diagnosis this system can help medical personnel identify measles and rubella more accurately based on the patient's symptoms and history. This will reduce the risk of diagnostic errors.
2. Better case management this system will help in planning effective treatment and provide proper quidence to medical personnel for treating patients wits measles and rubella.
3. Monitoring and reporting this system can be uses to track patient progress, create case reports and identify disease patterns to help control the spread of disease in the region.
4. Easy access the android platfom provides easy accsess to this system, enabling medical personnel at various levels to access and use this system anywhere and at any time.

By developing this decision support system, Dr. General Hospital. Rasidin in the padang region aims to improve the quality of care for patients with measles and rubella, reduce the risk of desiase spread, and increase efficienct in clinical decision making.

RESEARCH METHODS

To provide quidah, in preparing this reseach, it is necessary there is a framework structure that has clear stages. Such that seen in the following picture.



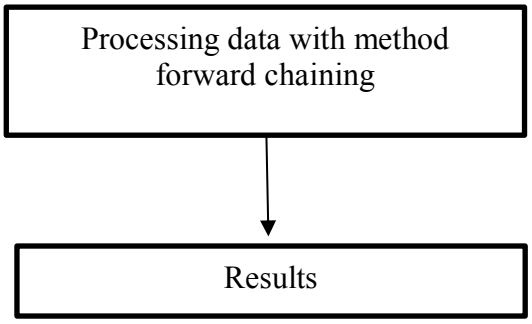


Figure 1. Research Framework

Based on the framework in the image above, each step can be described as below:

1. Identify the Problem

   At this stage, a review of the system will be carried out to observe and carry out more in-depth exploration and explore the problems that exist in the current system. This stage is the first step to determine the problem of the research.

2. Problem Analysis

   The problem analysis step is a step to understand the problem whose scope or boundaries have been determined, where:

   a. Preliminary analysis is limited to descriptive analysis to determine the variable characteristics of each data for the classification process according to the specified categories.
   b. Further analysis which aims to carry out calculations and test hypothesis results.

3. Determine goals

   Based on the problem formulation that has been created, the objective determination stage is useful for clarifying the framework of what is the target of this research.

4. Study Literature

   Through studying the literature, theories related to data mining were studied using the K-Means algorithm. Literature sources were obtained from journals and Proceedings.

5. Analyzing forward Chaining methods at this stage an analysis of the methods used will be carried out using prepared literature.

6. Research Results

In this research the author implemented the forward chaining method to be applied in grouping data using methods forward chaining so that the caoses of measles and disease can be identified rubella.

RESULTS AND DISCUSSION

1. Data Processing

From the results of reseacrh and data collection based on questionnaires in Regional General Hospitas Dr. Rasidin Padang Jl Air paku, Gn. Sarik kec. Kuranji, Padang City, west Sumatera. Measure by sharing. Questionnaires from patients, nurses, doctors and assesment components for each criterion, answers based on data which was obtained at the Dr. Rasidin Padang Regional General Hospital.

The forward chaining method is a mothod other than backward chaining used in artificial intelligence rules. This method carry out processing starting from a set of data and then carried out inference in accordance with the rules applied until a conclusion is found the optimal one. The inference engine will continue to loop the process to reach appropriate decision results. The method applied to forward chaining is the opposite of the backward chaining is the opposite of the backward chaining method. Excess This forward chaining method means thet new data can be entered into the table inference database and the possibility to make changes to inference rules.

Measles & Rubella Forward chaining Logic Flow :

1. Tabel Patients with Measles, Rubella and Fever

NO	name	Address	Gender	Religion	Symptom	Disease
1	Hikal	Balai baru street nomber 12	male	Islam	Red rash appears on the face to the limbs faver headache filek no appetite red aye a lump appeared on	Rubella

					around the ears and neck, consequenses swelling lymph glands clear.	
2	Rina Zuraina	Kurao Padang Street nomber 05	women	islam	Faver cough red eyes a flaky rash appears erythema of behin the ear until the whole body.	Measles
3	Mikha soraya	Balai baru street no 37	women	kristen	Body temperature 37.7 body tired, lethargic having a seizure keep crying do not want to eat fussy	fever

The followingg is a table of symptoms of measles, rubella, high fever an ordinary fever :

Tabel 2. Disease Symptoms

	Symptoms
Measles	• Red eyes, cough, runny nosw and faver for 4 days before the rash started to emerge • Reddish spots appear on the face then spreads thoughout body in 3 days. • White sport appear thoughout moouth line

	• Having contact with an infected child other measles 10- 12 days before the first sign appears.
Rubella	• Rash with reddish spots • Headache • Decreased appetite • Faver • Joint pain, especially if you suffer from it young women • Conjuctivistis (eyelid infection and eyelashes) • Cold or blocked nose • Swollen lymph glands ears and neck can also be signs that your child has rubella.
High Fever	• Irritable, cranky and lethargic • Body temperature reaches 37 degrees celsius or more • Decreased appetite • Cry more often • Breathe quickly • Sleeping or eatiing habits suffer change • Having a seizure
Common Fever	• The temperature is not too high • Cough • Flu • A little fussy • The body will start to warm

2. System Implementation

In the implementation process, the author will explain the flow and process implementation on the system user side. The initial stage that must be carried out by the user is to register their account registration done, the next step is for the user to enter the system with using an account that has been successfully registered previously. After successfully logging in, users can start analyzing measles and rubella by pressing start analysis button.on the analysis page, user will chppse a yes or no etatement on each

symptom that has been determined by the system, after all the symptoms if their child is selected, the next stage is that the user will press the analyze button to analyze symptoms. On the analysis results page, user can see the analysis results from the symptoms they choose, namely whethe their child has sysptoms of measles, rubella, high fever, low fever or healthy.

CONCLUSION

The following are the conclusion the author made besed on the discussion in decision support system for determining measles and rubella using Android based forward chaining method :

1. Making a decision support system to determine measles disease and rubella is intended so that all parties can easily find out do any of their family members have symptoms of measles and rubella or not ?
2. Using the forward chaining method in writing this thesis is considered appropriate because with the forward chaining method, all the symptoms are selected be users can be analyzed precisely because of forward chaining in essence adhere to “if “ and “then” logical analysis.
3. With the creation of this system, it is hoped that people suffering from measles and rubella will suffer can be reduced because the symptoms can be observed and analyzed through the system that the author created.

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