ANALYSIS OF THE COMPLETENESS OF ELECTRONIC MEDICAL RECORD OF OUTPATIENTS AT THE REGISTRATION SECTION OF THE PUBLIC SUKARAHAYU SUBANG HEALTH CENTER

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ABSTRACT

Completeness of filling in patient identification is very important in filling out electronic and manual medical record forms. The purpose of this study was to determine the percentage of completeness and incompleteness in the RME (identity). Researchers used quantitative methods with a descriptive approach. Population and sample using Slovin calculation. The results of the average percentage of unfilled identities in January were 37% of 93 data, February 33% of 94 data and March 31% of 96 data collected every month. Factors that cause incomplete filling of electronic medical record files at the registration section are communication between officers and patients, and often patients are negligent in bringing their identity (KTP/KK/SIM)

Keywords: Completeness, Electronic Medical Record, Registration

I. PRELIMINARY

At this time the world of health has developed a lot, one of which is the application of medical records that have computerized their activities, including filling out patient medical records electronically and has been widely used from several health services such as hospitals, clinics, or health centers.

Electronic Medical Record is the activity of computerizing the contents of health medical records and related electronization processes to produce a system that is specifically designed to support users with various facilities for completeness and accuracy of data. Electronic medical records are stated in Permenkes number 269/MENKES/PER/III/2008 in article 2 which contains "(1) Medical records must be made in writing, complete, and clear or electronically. (2) the administration of medical records using electronic information technology is regulated by its own regulations [1].

From previous research by [2], it was found that the completeness of the medical record file data was 68% and 32% had not been completely filled out of the 43 files that were identified. Factors causing incompleteness can occur due to lack of communication with patients.

By looking at the problems that occur in the field, the researchers are interested in taking the title **"Analysis of Completeness of Outpatient Electronic Medical Records in the Registration Section".** The aim is to determine the percentage of completeness of the RME, to find out the factors of incompleteness and to find out what efforts can be made to minimize the occurrence of incompleteness.

II. THEORY AND HYPOTHESES

A. Theory

1. Community Health Center (Puskesmas)

Community Health Center is a health service facility that organizes public health efforts and first-level individual health efforts, by prioritizing promotive and preventive efforts, to achieve the highest level of public health in its working area. Puskesmas have the task of implementing health policies to achieve health development goals in their working areas in order to support the realization of healthy sub-districts. Each

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Puskesmas is required to have a permit to provide health services, this permit is granted by the Regency/City Government, this permit is valid for five years and can be extended. In addition, Puskesmas must also be periodically accredited at least once every three years. The position of the Puskesmas as a form of service that is classified as "Primary Health Care Service" is a basic health service that is needed by most people and has a strategic value to improve the health status of the community.Ministry of Health, 2014).

2. Outpatient

According to the Decree of the Minister of Health of the Republic of Indonesia number 1165/MENKES/SK/2007/chapter 1, article 1 paragraph 4 "outpatient services are patient services for observation, diagnosis, treatment, medical rehabilitation and other health services without staying in the hospital. The first form of outpatient service is that provided by a clinic that is related to a hospital (hospital-based ambulatory care) [3].

3. Outpatient Registration Place (TPPRJ)

Outpatient Registration Place (TPPRJ) is a place where patients will register to the polyclinic to be addressed according to the complaint of the disease, as well as get information about how to pay to be made.

Registration is the procedure for accepting patients who will go to the polyclinic or who will be treated as part of the hospital service procedure system. Patient admission procedures can be adapted to the system adopted by each health service [4].

4. Medical records

Medical record is a file containing notes and documents regarding identity, history taking, diagnosis of treatment, examination, treatment, action, and other services provided to patients at health service facilities which includes patient registration starting from the patient's reception area, then responsible for collecting , analyze, process, and ensure the completeness of medical record files from outpatient units, inpatient units, emergency units, and other supporting units [5].

The purpose of medical records is to support the achievement of administrative order in the context of efforts to improve health services. The philosophy of medical records containing the values of ALFRED AIR are as follows:

a. *Administration.*
b. *Legal.*
c. *Finance.*
d. *Research.*
e. *Education.*
f. *Documentation.*
g. *Accurate.*
h. *Informative.*
i. *Responsibility* [6].

Along with the development of information and communication technology (ICT) that has swept the world, it has had a major impact on changes in all fields, including the health sector. One of the applications is the Computerized Medical Record or Electronic Health Record [7].

5. Electronic Medical Records (RME)

Electronic Medical Record (RME) is contained in a system that is specifically designed to support users with various facilities for completeness and accuracy of data, alerts, alerts, has a system to support clinical decisions and connects. Basically, RME is the use of information technology devices for collecting, storing, processing and accessing data stored in patient medical records in hospitals in a database management system that collects various medical data sources. Some modern hospitals have combined RME with the Hospital Management Information System (SIMRS) application which is a master application that not only contains RME but has been added with features such as administration, billing, nursing documentation and reporting [8].

a. Advantages of Electronic Medical Records

The level of confidentiality and security of electronic documents is getting higher and safer.

Permenkes No. 269/2008, for example, the storage of medical records for at least 5 years from the date of the patient's treatment (article 7), electronic medical records can be stored for decades in the form of solid disk storage media (CD/DVD).

RME can store data with a large capacity, so doctors and medical staff know the track record of the patient's condition in the form of previous medical history.

The ITE Law also stipulates that electronic documents (including RME) are legal to be used as evidence in legal cases.

b. Weaknesses / Disadvantages of Electronic Medical Records

Requires a larger initial investment than paper medical records, for hardware, software and supporting costs (such as electricity).

The time it takes for keypersons and doctors to learn the system and redesign the workflow.

Risk of computer system failure.

The problem of limited ability to use the computer of its users.

The law on the implementation of electronic medical records in addition to the laws and regulations governing medical records, is more specifically regulated in the Minister of Health Regulation Number 269 of 2008 concerning Medical Records Article 2: (1) Medical records must be written in full, and clearly or electronically, (2) The operation of medical records using electronic information technology is further regulated by separate regulations. Since

the Law on Information and Electronic Transactions (UU ITE) Number 11 of 2008 has provided answers to existing doubts. The ITE Law has provided opportunities for the implementation of RME. RME is also a valid legal evidence. This is also supported by the Law on Information and Electronic Transactions (ITE) 10 in articles 5 and 6, namely Article 5: (1). Electronic information and/or electronic documents and/or their printed results are valid legal evidence. (2). Electronic information or printed electronic documents as referred to in paragraph (1) (3). Electronic information or electronic documents are said to be valid if they have used an electronic system in accordance with the provisions stipulated in this Law, which is an extension of valid evidence in accordance with the procedural law applicable in Indonesia.

6 Medical Record Equipment

The standard indicator for the completeness of filling out medical records is at the latest 1 X 24 hours after the service is 100%. Therefore, filling in complete medical records is a must for people who are obliged to fill in, in this case are Professional Care Providers (PPA), both doctors, nurses, nutritionists, pharmacists, medical rehabilitation workers and medical recorders [9].

B. HYPOTHESIS

A hypothesis in a study means the answer from a temporary study, a benchmark guess or a temporary proposition whose truth will be proven in the study [10]. The author formulates the research hypothesis that there are still incompleteness in the process of inputting patient data even though the use of the electronic-based health service system (RME).

III. RESEARCH METHODOLOGY

1. Types of research

This study uses quantitative methods with a descriptive research approach. Quantitative research is a research method based on the philosophy of positivism, used to examine certain populations or samples, collection using research instruments, quantitative or statistical data analysis, with the aim of proposing predetermined hypotheses. Quantitative methods were used because this study used numerical data in the form of population and sample data of RME patients in the registration section. While the descriptive approach is carried out to determine the existence of independent variables, either only one or more variables [11].

2. Population and Sample

The population in this study was electronic medical record files at the outpatient registration section in January-March 2021 and sampling was carried out with an error rate of 10% Slovin [12].

The formula for calculating the sample from Slovin is:

$$n = \frac{N}{1 + ne2}$$

Note: n = Number of Samples

N = Total Population
e = fault tolerance limit (0, 1)

3. Data collection technique

a. Literature Study

Literature study is by studying references in the form of articles from the internet that are related to research.

b. Field Study

1) Observation/Observation

Observations were made by viewing and observing directly the RME data file of outpatients to see incompleteness in the data entry process at the Sukarahayu Health Center.

2) Documentation

Documentation is done by collecting data needed by the author when the research takes place such as the history of the puskesmas, procedures and others.

c. Research Instruments

The instrument used in this study was to observe and conduct the registration process directly to patients during an internship at the Sukarahayu Subang Health Center.

d. Place and time of research

The research was conducted at UPTD Puskesmas Sukarahayu Subang, from January to March 2021, the scope was focused on the existing problem "Analysis of the Completeness of Electronic Medical Records of Outpatients in the Registration Section of the Sukarahayu Subang Health Center".

IV. RESEARCH RESULT

The population in this study was electronic medical record files at the outpatient registration section in January-March 2021 as many as 5,630 patient data electronic medical record files were sampled with an error rate of 10% Slovin [13].

Table 4.2.1 List of Research Populations

No	Month	Population Size
1	January 2021	1,470 Data
2	February 2021	1,740 Data
3	March 2021	2,420 Data
Amount		5,630 Data

The formula for calculating the sample from Slovin (Sujarweni, 2020) is:

$$n = \frac{N}{1 + ne2}$$

Note: n = Number of Samples
N = Total Population
e = fault tolerance limit (0,1)

January

$$= \frac{1.470}{1 + 1.470\ (0,1)^2} = \frac{1.470}{1 + 1.470\ (0,01)} = \frac{1.470}{1 + 14,7} = \frac{1.470}{15,7} = 93$$

February

$$= \frac{1.740}{1 + 1.720\ (0,1)^2} = \frac{1.740}{1 + 1.740\ (0,01)} = \frac{1.740}{1 + 17,4} = \frac{1.740}{18,4} = 94$$

March

$$= \frac{2.420}{1 + 2.420\ (0,1)^2} = \frac{2.420}{1 + 2.420\ (0,01)} = \frac{2.420}{1 + 24,2} = \frac{2.420}{25,2} = 96$$

From the above calculation, the sample size of each population can be seen in the following table:

Table 4.2.2 Number of Samples per Month

No	Month	Population Size	Sample Size
1	January 2021	1,470 Data	93 Data
2	February 2021	1,740 Data	94 Data
3	March 2021	2,420 Data	96 Data
Amount		5,630 Data	283 Data

1. Percentage of Completeness and Incompleteness of Electronic Medical Record data

Calculating the percentage results of completeness and incompleteness of medical record files:

Complete Percentage = Number of Complete Items / Number of All Forms x 100 %

Incomplete Percentage = Number of Incomplete Items / Number of All Forms x 100 %

Table 4.3.1 Analysis of complete and incomplete data for January 2021

No	Items	Patient Identification Analysis				Amount
		Complete	%	No Complete	%	
1	Medical Record Number	93	100%	0	0%	93
2	NIK	55	59%	38	41%	93
3	Name Patient	70	75%	23	25%	93
4	Type Sex	93	100%	0	0%	93
5	Place and date of birth	66	71%	27	29%	93
6	Religion	80	86%	13	14%	93
7	Mother's name	80	86%	13	14%	93
8	Address	70	75%	23	25%	93
9	Marital status	70	75%	23	25%	93
10	Work	93	100%	0	0%	93
11	Phone/Mobile Phone Number	50	54%	43	46%	93
12	Allergy History	65	70%	28	30%	93
Average		74	63%	19	37%	100%

Based on the table above shows that the completeness and incompleteness of RME data, the average identification of completeness in January is 63%, 37% of the identification is still incomplete, from the data of 93 samples.

Table 4.3.2 Analysis of complete and incomplete data for February 2021

No	Items	Patient Identification Analysis				Amount
		Complete	%	No Complete	%	
1	Medical Record Number	94	100%	0	0%	94
2	NIK	60	0.64%	34	36%	94
3	Name Patient	94	100%	0	0%	94
4	Type Sex	94	100%	0	0%	94
5	Place and date of birth	70	74%	24	26%	94
6	Religion	94	100%	0	0%	94
7	Mother's name	70	74%	24	26%	94
8	Address	60	64%	34	36%	94
9	Marital status	75	80%	19	20%	94
10	Work	94	100%	0	0%	94
11	Phone/ Mobile Phone Number	50	53%	44	47%	94
12	Allergy History	70	74%	24	22%	94
Average		77	67%	17	33%	100%

Based on the table above shows that the completeness and incompleteness of RME data, the average identification of completeness in February was 67%, 33% of the identification was still incomplete, from the data of 94 samples.

Table 4.3.3 Analysis of complete and incomplete data for March 2021

No	Items	Patient Identification Analysis				Amount
		Complete	%	No Complete	%	
1	Medical Record Number	96	100%	0	0%	96
2	NIK	70	73%	26	27%	96
3	Name Patient	96	100%	0	0%	96
4	Type Sex	96	100%	0	0%	96
5	Place and date of birth	70	73%	26	27%	96
6	Religion	96	100%	0	0%	96
7	Mother's name	96	100%	0	0%	96
8	Address	70	73%	26	27%	96
9	Marital status	70	73%	26	27%	96
10	Work	80	83%	16	17%	96
11	Phone/ Mobile Phone Number	60	63%	36	37%	96
12	Allergy History	70	73%	26	27%	96
Average		81	69%	15	31%	100%

Based on the table above shows that the completeness and incompleteness of the RME data, the average identification of completeness in March is 69%, 31% of the identification is still incomplete, from the data of 96 samples.

2. Factors causing incomplete electronic medical record data

a. Patient discipline in carrying self-identity.

b. Staff communication with patients.

3.Efforts to minimize incomplete electronic medical record data

a. Monitoring or evaluation is held regarding the completeness of filling.

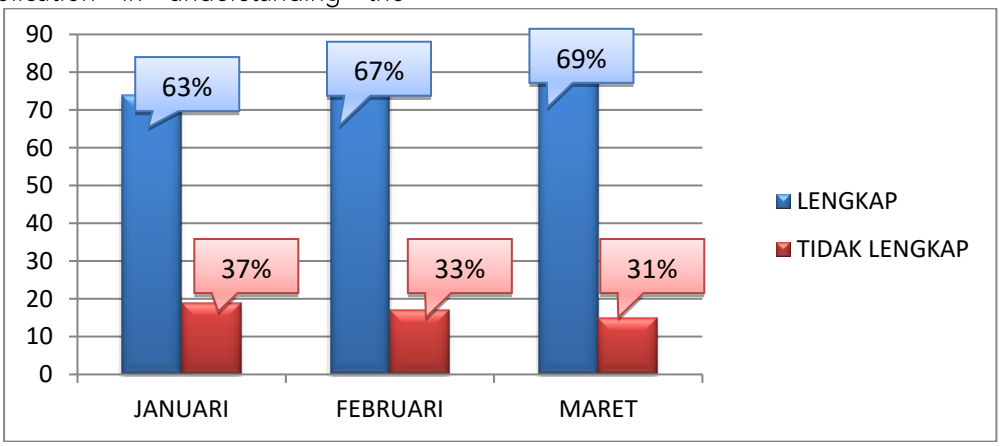
b. Conduct periodic socialization in terms of filling and application in understanding the importance of filling out complete medical records, even though they are electronically based.

c. Maintain good communication with staff and patients while in the data collection process at the registration section.

V. DISCUSSION AND CONCLUSION

A. Discussion

1. Percentage Completeness of Electronic Medical Record Data



5.1.1 Graph of Average Completion for 3 months

Based on the results of the data analysis above, from the three months there has been an increase in RME completeness data, but there are still incomplete completeness data, namely:

In January the average incompleteness of 37% of 93 data whose patient identification was incomplete, namely: NIK 41%, Patient name 25%, TTL 29%, Religion 14%, Mother's name 14%, Address 25%, Marital status 25% , Phone 46% and history of allergies 28%. On average, the data that has been completely filled in is 63% of the 93 data.

In February the average incompleteness of 33% of 94 data whose patient identification was incomplete, namely: NIK 36%, TTL 26%, Mother's name 26%, Address 36%, Marital status 20%, Telephone 47%, History of allergies 22%. The

average data that has been completed is 67% of the 94 data.

In March the average incompleteness was 31% of 96 data whose patient identification was incomplete, namely: NIK 27%, TTL 27%, Address 27%, Marital status 27%, Occupation 17%, Phone 37%, History of allergies 27%. The average data that has been completed is 69% of the 96 data.

2. Factors Causing Incomplete Electronic Medical Records

Based on the results of direct observations and interviews in the field regarding the factors that cause incomplete filling of electronic medical record files on patient identities, namely due to communication with patients, patients who sometimes forget to bring their identities such as ID cards/KK which can cause incomplete electronic medical record files, especially in looking for RME data, one must first use the NIK to match if there are similarities in names.

The communication factor between the registration officer and the patient affects the completeness, such as the officer interviewing the patient while at the registration section to record their identity.

3. Efforts Made to Minimize the Occurrence of Incomplete Electronic Medical Record Data

The completeness of filling out the medical record file is important as well as filling out the RME (Patient Identity), so an evaluation must be carried out on officers for more effective communication in interviewing patients because to prevent the increase in incompleteness factors that occur.

Then as officers must always inform patients to always carry their identity for the purposes of collecting electronic medical records [14].

a. Monitoring or evaluation is held regarding the completeness of filling.

b. Conduct periodic socialization in terms of filling and application in understanding the importance of filling out complete medical records, even though they are electronically based.

c. Maintain good communication with officers and patients while in the data collection process at the registration section.

B. Conclusion

Based on the results of the research data analysis, the following conclusions can be drawn:

1. There are still incomplete electronic medical record files in January 37%, February 33% and March 31%. This affects the quality of the health center service itself.
2. There are two incomplete factors in filling out electronic medical records, the first factor is due to communication between officers and patients and the second is because the patient is negligent in carrying his identity.
3. Efforts are made to minimize the occurrence of incompleteness, namely monitoring, socializing and maintaining good communication between officers and patients.

C. Suggestion

a. Communication with patients must be improved again because if the patient does not bring personal data, the officer must actively ask the patient.

b. Always remind patients to bring KIB if they don't bring personal data.

c. Socialization for officers about the importance of completeness of Medical Records whose completeness standards must be 100%.

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