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Factors Affecting the Completeness of Medical Information Related to the Accuracy of Inpatient Diagnosis Coding at Dr. Rasidin Padang Regional General Hospital

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ABSTRACT

Dr. Rasidin Padang Regional General Hospital (RSUD dr. Rasidin Padang) experienced delayed claims involving 132 inpatient medical record documents. This study aimed to identify the factors related to the completeness of medical information that influence the accuracy of diagnosis coding at RSUD dr. Rasidin Padang. This research employed a quantitative analytical survey design using a cross-sectional approach. The population and sample in this study consisted of 57 healthcare workers responsible for completing patients' medical information and 132 inpatient medical record documents with pending claims. The sampling technique used was simple random sampling. The instrument used in this study was a questionnaire. Data analysis was conducted using the Chi-square test. The univariate analysis showed that the staff were disciplined, had a low workload, had poor communication, had incomplete facilities and infrastructure, and were compliant in implementing SOPs/policies. The bivariate analysis indicated that there was a relationship between diagnosis coding accuracy and facilities and infrastructure. However, there was no relationship between diagnosis coding accuracy and discipline, workload, communication, or SOPs/policies at RSUD dr. Rasidin Padang. The completeness of medical information affects the level of diagnosis coding accuracy. Efforts to improve diagnosis coding accuracy should focus on facilities and infrastructure, as a significant relationship was found between coding accuracy and facilities and infrastructure.

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1. INTRODUCTION

The purpose of medical records is to support the achievement of orderly administration as part of efforts to improve the quality of health services in hospitals. Without the support of a proper and well-managed medical record system, administrative order in hospitals will not be achieved as expected.

Medical record completeness refers to a review or assessment of the number of medical record sheets in accordance with the length of hospitalization, including the completeness of medical, paramedical, and supporting medical forms based on procedures established by the Directorate General of Medical Record Services. Meanwhile, the completeness of medical information refers to a review or assessment of the content of medical records related to service documentation, as well as an evaluation of whether the medical record documentation is complete. In other words, medical information completeness is an assessment of the content of medical records in relation to documentation of services and the evaluation of medical record completeness.

Diagnosis is a clinical decision regarding the responses of individuals, families, and communities to a patient's health problems, whether actual or potential, obtained based on the results of nursing assessments and examinations.

A previous study entitled "The Relationship Between the Completeness of Medical Information and the Accuracy of Diagnosis Coding in Inpatient Medical Record Documents at Karanganyar District Regional General Hospital in 2013" used a quantitative analysis with a cross-sectional approach. The study population consisted of 657 inpatient medical record documents. The results showed that there was a relationship between the completeness of medical information and the accuracy of diagnosis coding in inpatient medical record documents at Karanganyar District Regional General Hospital in 2013, with a p-value of 0.012. The conclusion of the study was that there was a relationship between the completeness of medical information and the accuracy of diagnosis coding in inpatient medical record documents at the hospital.
Another study entitled "The Relationship Between the Clarity and Completeness of Diagnosis Documentation and the Accuracy of Diagnosis Coding Based on ICD-10 at RST. Reksodiwiryo Padang" reported that 61 medical record documents were delayed or categorized as pending claims due to unclear diagnosis documentation or incomplete medical information. The results indicated that there was no significant relationship between the clarity of diagnosis documentation and diagnosis accuracy.

Based on an interview conducted on May 2, 2025, with the Head of the Medical Record Installation at RSUD dr. Rasidin Padang, it was found that there had been an increase in pending inpatient claims over the last three months, totaling 132 inpatient medical record documents. Among these 132 documents, 75 were delayed due to inaccurate diagnosis coding, consisting of 23 medical records in January, 23 in February, and 29 in March. The Head of the Medical Record Installation stated that the factors contributing to inaccurate diagnosis coding were incomplete medical information entry and unclear diagnosis documentation written by physicians. The researcher chose RSUD dr. Rasidin Padang as the study setting because the hospital experienced an increase in pending claims caused by inaccurate diagnosis coding.

Based on the background above, the researcher conducted a study at RSUD dr. Rasidin Padang entitled "Factors Related to the Completeness of Medical Information Associated with the Accuracy of Inpatient Diagnosis Coding at RSUD dr. Rasidin Padang in 2025."

2. METHOD

He study employed a quantitative analytical survey design using a cross-sectional approach to identify factors related to the completeness of medical information and its association with the accuracy of diagnosis coding at RSUD dr. Rasidin Padang in 2025.

3. RESULTS AND DISCUSSION

1. Univariate Analysis

a. Completeness of Medical Information Related to the Accuracy of Inpatient Diagnosis Coding at RSUD dr. Rasidin Padang

Table 1. Frequency Distribution of Medical Information Completeness

No	Medical Information Component	Frequency (f)	Percentage (%)
1	Admission and discharge notes – Complete	83	62.9
	Admission and discharge notes – Incomplete	49	37.1
	Total	**132**	**100.0**
2	Inpatient assessment – Complete	75	56.8
	Inpatient assessment – Incomplete	57	43.2
	Total	**132**	**100.0**
3	Integrated Patient Progress Notes (CPPT) – Complete	75	56.8

	Integrated Patient Progress Notes (CPPT) – Incomplete	57	43.2
	Total	**132**	**100.0**
4	Medication administration record – Complete	85	64.4
	Medication administration record – Incomplete	47	35.6
	Total	**132**	**100.0**

Based on Table 1, among 132 inpatient medical record documents with pending claims, the highest proportion of complete medical information was found in the medication administration record, with 85 documents (64.4%). Meanwhile, the highest proportion of incomplete documentation was observed in inpatient assessment, with 57 documents (43.2%), and 57 incomplete integrated patient progress notes (CPPT) (43.2%).

b. Frequency Distribution of Inpatient Diagnosis Coding Accuracy at RSUD dr. Rasidin Padang

Table 2. Frequency Distribution of Inpatient Diagnosis Coding Accuracy

No	Coding Accuracy	Frequency (f)	Percentage (%)
1	Accurate	57	43.2
2	Inaccurate	75	56.8
	Total	**132**	**100.0**

Based on Table 2, among 132 inpatient medical record documents with pending claims, the majority were caused by inaccurate diagnosis coding, totaling 75 documents (56.8%), while 57 documents (43.2%) had accurate diagnosis codes.

c. Respondent Characteristics

Table 3. Frequency Distribution of Respondent Characteristics (n = 57)

Age

Category	Frequency (f)	Percentage (%)
20–30 years	11	19.3
31–40 years	23	40.4
41–50 years	22	38.6
>50 years	1	1.8
Total	**57**	**100.0**

Occupation

Category	Frequency (f)	Percentage (%)
Nutritionist	1	1.8
Nurse	29	50.9
Physician	4	7.0
Pharmacist	3	6.3
Medical Records Officer	20	35.1
Total	**57**	**100.0**

Gender

Category	Frequency (f)	Percentage (%)
Female	52	91.2
Male	5	8.8
Total	**57**	**100.0**

Length of Employment

Category	Frequency (f)	Percentage (%)
< 1 year	2	3.5
1–5 years	12	21.1
6–10 years	9	15.8
11–15 years	19	33.3
>15 years	15	26.3
Total	**57**	**100.0**

Based on Table 3, most respondents were aged 31–40 years (23 respondents; 40.4%). The most common occupation was nurse (29 respondents; 50.9%). Most respondents were female (52 respondents; 91.2%). Regarding length of employment, the majority had worked for 11–15 years (19 respondents; 33.3%).

d. Discipline Factor

Table 4. Frequency Distribution of Discipline (n = 57)

Category	Frequency (f)	Percentage (%)
Disciplined	39	68.4
Not disciplined	18	31.6
Total	**57**	**100.0**

Based on Table 4, 39 respondents (68.4%) were disciplined in completing inpatient medical record documentation.

e. Workload Factor

Table 5. Frequency Distribution of Workload (n = 57)

Category	Frequency (f)	Percentage (%)
Low	55	96.5
High	2	3.5
Total	**57**	**100.0**

Based on Table 5, 55 respondents (96.5%) reported having a low workload in completing medical information.

f. Communication Factor

Table 6. Frequency Distribution of Communication (n = 57)

Category	Frequency (f)	Percentage (%)
Good	27	47.4
Poor	30	52.6
Total	**57**	**100.0**

Based on Table 6, 27 respondents (47.4%) reported good communication in completing patient medical information.

g. Facilities and Infrastructure Factor

Table 7. Frequency Distribution of Facilities and Infrastructure (n = 57)

Category	Frequency (f)	Percentage (%)
Complete	3	5.3
Incomplete	54	94.7
Total	**57**	**100.0**

Based on Table 7, only 3 respondents (5.3%) reported having complete facilities and infrastructure to support medical information completion, while 54 respondents (94.7%) reported incomplete facilities and infrastructure.

h. SOP/Policy Compliance Factor

Table 8. Frequency Distribution of SOP/Policy Compliance (n = 57)

Category	Frequency (f)	Percentage (%)
Compliant	42	73.7
Non-compliant	15	26.3
Total	**57**	**100.0**

Based on Table 8, 42 respondents (73.7%) were compliant in completing medical information according to SOPs/policies.

2. Bivariate Analysis

a. Association Between Diagnosis Coding Accuracy and Discipline Factor

Table 9. Association Between Diagnosis Coding Accuracy and Discipline (n = 57)

Discipline	Accurate (f)	Inaccurate (f)	Total	p-value
Disciplined	17	22	39	0.952
Not disciplined	8	10	18	
Total	**25**	**32**	**57**	

Based on Table 9, among 57 respondents, 39 were disciplined and 18 were not disciplined in completing patient medical information. The Chi-square test showed a p-value of 0.952 ($p > 0.05$), indicating that there was no association between diagnosis coding accuracy and discipline among staff at RSUD dr. Rasidin Padang.

b. Association Between Diagnosis Coding Accuracy and Workload Factor

Table 10. Association Between Diagnosis Coding Accuracy and Workload (n = 57)

Workload	Accurate (f)	Inaccurate (f)	Total	p-value
Low	25	30	55	0.203
High	0	2	2	
Total	**25**	**32**	**57**	

Based on Table 10, 55 respondents reported a low workload and 2 respondents reported a high workload. The Chi-square test resulted in a p-value of 0.203 ($p > 0.05$), indicating no association between diagnosis coding accuracy and workload at RSUD dr. Rasidin Padang.

c. Association Between Diagnosis Coding Accuracy and Communication Factor

Table 11. Association Between Diagnosis Coding Accuracy and Communication (n = 57)

Communication	Accurate (f)	Inaccurate (f)	Total	p-value
Good	9	18	27	0.129
Poor	16	14	30	
Total	**25**	**32**	**57**	

Based on Table 11, 27 respondents had good communication and 30 had poor communication. The Chi-square test showed a p-value of 0.129 ($p > 0.05$), indicating no association between diagnosis coding accuracy and communication at RSUD dr. Rasidin Padang.

d. Association Between Diagnosis Coding Accuracy and Facilities and Infrastructure Factor

Table 12. Association Between Diagnosis Coding Accuracy and Facilities and Infrastructure (n = 57)

Facilities & Infrastructure	Accurate (f)	Inaccurate (f)	Total	p-value
Complete	3	0	3	0.044
Incomplete	22	32	54	
Total	**25**	**32**	**57**	

Based on Table 12, 3 respondents reported complete facilities and infrastructure, while 54 reported incomplete facilities and infrastructure. The Chi-square test yielded a p-value of 0.044 ($p < 0.05$), indicating a significant association between diagnosis coding accuracy and facilities and infrastructure at RSUD dr. Rasidin Padang.

e. Association Between Diagnosis Coding Accuracy and SOP/Policy Compliance Factor

Table 13. Association Between Diagnosis Coding Accuracy and SOP/Policy Compliance (n = 57)

SOP/Policy Compliance	Accurate (f)	Inaccurate (f)	Total	p-value
Compliant	19	23	42	0.726
Non-compliant	6	9	15	
Total	**25**	**32**	**57**	

Based on Table 13, 42 respondents were compliant with SOPs/policies and 15 were non-compliant. The Chi-square test produced a p-value of 0.726 ($p > 0.05$), indicating no association between diagnosis coding accuracy and SOP/policy compliance at RSUD dr. Rasidin Padang

4. CONCLUSION

Based on the findings of this study conducted at RSUD dr. Rasidin Padang in 2025, it can be concluded that among **132 inpatient medical record documents** with pending claims, the majority were caused by **inaccurate diagnosis coding (75 documents; 56.8%)**, while **57 documents (43.2%)** had accurate diagnosis codes.

Regarding the completeness of medical information, the component with the highest completeness was the **medication administration record (85 documents; 64.4%)**, whereas the most frequently incomplete components were the **inpatient assessment (57 documents; 43.2%)** and the **integrated patient progress notes/CPPT (57 documents; 43.2%)**.

The bivariate analysis involving **57 healthcare workers** showed that **discipline (p=0.952)**, **workload (p=0.203)**, **communication (p=0.129)**, and **compliance with SOPs/policies (p=0.726)** were not significantly associated with diagnosis coding accuracy ($p>0.05$). In contrast, **facilities and infrastructure** were significantly associated with diagnosis coding accuracy (**$p=0.044$; $p<0.05$**).
Therefore, strategies to improve the accuracy of inpatient diagnosis coding at RSUD dr. Rasidin Padang should prioritize strengthening **facilities and infrastructure** supporting medical record documentation and coding

activities. Furthermore, improving the completeness of medical information—particularly in the **inpatient assessment** and **CPPT documentation**—is essential to reduce the number of pending inpatient claims

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