Original Research Article

Comparison of results of statistical analysis of health care for inpatients of Islamic hospitals in Padang city in 2019

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ABSTRACT

Background: The success of hospitals in providing services seen from the results of health care statistics, in the form of daily census, day of service, average length of stay (ALOS), bed occupancy rate (BOR), bed turnover rate (BTR), turnover interval (TI), coding disease diagnoses in the of Islam Islamic hospital.

Methods: Research uses descriptive method with qualitative approach. Data collection technique used is the observation method that is direct observation of medical records and the method is done by collecting data from the Islamic Hospital in the city of Padang for processing statistical data.

Results: During the period of June 1 to June 30, 2014 there were 330 outpatients, 127 bed units in IbnuSina while in Siti Rahmah outpatients were recorded 264 patients with 48 beds. From data it appears that the most patients entering in the city of Padang are Siti Rahmah with the difference in the number of patients 66 patients with 79 beds. And information is obtained that this is influenced by the availability of adequate facilities and services.

Conclusions: The highest of patients from the Islamic hospital is Siti Rahmah with a diagnosis of dengue hemorrhagic fever (DHF) (A91), the main diagnosis frequency of chapter XI is 15.45% with the most patients coming from in Padang as many as 194 patients. From the results of statistical data, it can be analyzed that the TLOSis 1357 days and ALOS is 4.11 or 4 days. BOR is 32.94%, The BTR 2.60, TI 7.74 days.

Keywords: Analysis, Coding, Diagnosis, Medical records

INTRODUCTION

Medical record data is a source of information in the processing of hospital health care statistics, because one of the successes in hospital services can be seen through the results of health care statistics.[1] Information is the core of the health care implementation system.[2]

Medical records, in the form of manual or automatic, can hold medical information that outlines all aspects of patient care.[3] Health care statistics are an important source of information for hospitals, so they have a large role in improving the quality of hospital services.[4] Because of the importance of health care statistics, health information management professionals must be able to collect information as accurately as possible, so mistakes in data processing can later be avoided.[5]

In collecting health care statistical data, medical staff must know why the data was collected, the purpose of the collection and the purpose of being collected. This increasing demand for health information requires facilities to maintain effective and efficient information systems using good indices and registers.[6] The use of

computers capable of receiving, storing and producing data efficiently and easily is now a must.[7]

By processing good health service data, authors will be able to see how the quality of service in a hospital, this can be done by looking at the results of the analysis of each hospital, in this case authors see a comparison of the statistical analysis results of health care for inpatients in hospitals Islam in the city of Padang through the results of data processing health care statistics.[8] The broad coverage of health care causes many obstacles that must be faced by health information officers, especially the medical record department. Therefore, the scope of this final writing is limited to comparison of analysis results in the form of daily census, service day, average length of stay (ALOS), bed occupancy rate (BOR), bed turnover rate (BTR), turnover interval (TI), coding diagnosis of the disease based on ICD-10 and coding procedures according to ICD-9-CM.[9] The purpose of this study is to look at the results of comparative statistics processing of Islamic health care in Padang city that affects the quality of health care services.

METHODS

This research uses descriptive method with a qualitative approach. The research design used in this research is cross-sectional which is descriptive in nature. The population used is the patient's medical record data registered in the register book in the period June 1 to June 30, 2014. The data collection technique used is the selection method with observation, namely direct observation of medical record data and the method is done by collecting some data from Islamic Hospital in the city of Padang. Then see the diagnosis of most diseases, diagnosis of actions and procedures based on ICD-10 and ICD-9 CM and the results of statistical analysis of health care. The data is sorted by the scope and hospital, then the results of the data are compared, and conclusions are drawn from the data, for the sample criteria seen from the factors that influence health care services in the hospital.

Inclusion criteria in this research are medical record data consisting of daily census, service day, statistical data in the form of ALOS, BOR, BTR, TI, and diagnoses patient's illness. As for the exclusion criteria in this study include the age limit of the patient and the reason the patient came to the health service or hospital.

RESULTS

Based on the inpatient register book at the Islamic Hospital of Siti Rahmah Padang and the Islamic hospital of IbnuSina Padang from 01 June to 30 June 2014 there were 330 patients who came out in that range and data processing with 127 beds while in Siti Rahmah hospital Padang 264 patients with 48 beds were discharged after the abstraction. The results of processing the main diagnoses and their interpretation are based on ICD-10 and can be seen in Table 1.

Table 1: Comparison of the main diagnostic results at RSI in Padang city.

Focus	Siti Rahmah Islamic hospital	IbnuSina Islamic hospital
Number of patients discharge	330 patients, 127 bed units	264 Patients, 48 bed units
Processing of diagnoses based on ICD-10	SCTPP (74.4) = 6 Patients	Gravid Aterm (Z34.9)= 42 patients
Frequency distribution of diagnoses ICD-10	DHF (A91) = 14 patients Appendicitis acute (K35.8) = 10 Patients	SCTPP (74.4)= 15 patients Gravitaterm (Z34.9) Appendicitis (47.09)= 5 patients
The grouping of procedures is based on the main diagnosis	Disease of the digestive system (BAB XI)= 51 patients Certain infections and parasitis disease (BAB I)= 50 patients	Disease of the digestive system (BAB XI)= 45 patients Factor influencing health status and contact with health (BAB XXI)= 42 patients Neoplasm (BAB II)= 38 patients
Patient distribution by area and diagnosis	Padang city (DHF)= 194 patients Dyspepsia= 6 patients	Padang city Gravid aterm= 42 patients Padang Pariaman (Camamae)= 2 patients Mentawai= 4 patients
Classification of diagnoses according to DTD and DTD + codes	Urolitiasis (code DTD:215)= 19 patients YTK (270.9)= 15 patients Dengue fever (kode DTD: 032.1)= 14 patients	Normal pregnancy surveillance (DTD: 294.0)= 42 patients Complications of pregnancy and childbirth (DTD:242.9)= 17 patients

In Table 1 several diagnoses can be in the same code but constitute a group of diagnoses in different languages in the table below will be translated into comparison of the results of the main diagnosis processing in Islamic hospital in the city of Padang. From table 1. authors can see that the number of patients returning from Islamic hospitals in the city of Padang in the June 2014 period totaled 330 patients with 127 bed units at Siti Rahmah hospital while in IbnuSina hospital there were 264 patients with 48 beds.

Results and analysis of health care statistics of Islamic Hospitals in the city of Padang. Basic statistics used at a hospital include the daily census of inpatients. Day of inpatient services, LOS, BTR, BOR and IT. The following Table 2 shows statistics for inpatients at the Islamic Hospital in Padang in the June period.

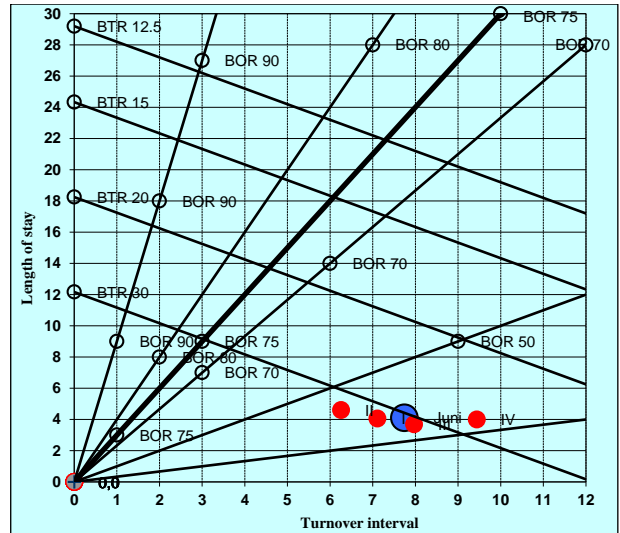From the statistics obtained, it can be presented in a Johnson Barber graph (Figure 1).

Figure 1: Grafik Barber Johnson graph of Siti Rahmah Islamic hospital Padang for the June 2014.

Table 2: Basic statistic of Islamic hospital for the June 2014.

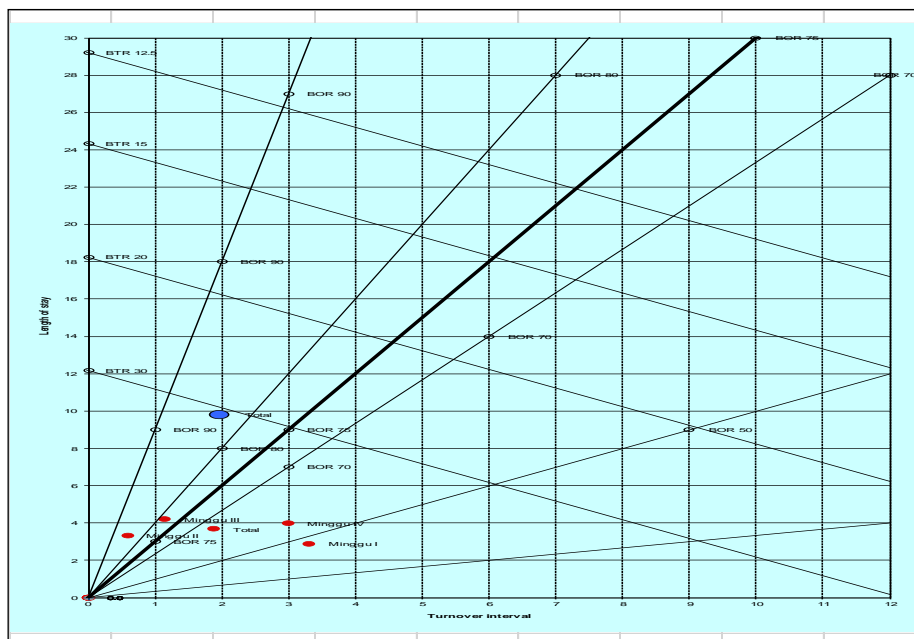| Period	PK	RSI Siti Rahmah							RSI IBNU SINA						
		SS	HL	BOR	BTR	TI	TLOS	ALOS	PK	SS	HL	BOR	BTR	TI	TLOS	ALOS
I	71	54.86	54.86	43.19	0.56	7.1	288	4.06	40	29.00	29.00	60.42	0.83	3.33	115	2.88
II	92	44.43	44.71	35.21	0.72	6.26	423	4.60	77	41.00	41.43	86.31	1.60	0.60	254	3.30
III	70	47.29	47.29	37.23	0.55	7.97	258	3.69	68	36.43	36.71	76.49	1.42	1.16	284	4.18
IV	97	25.22	25.22	19.86	0.76	9.44	388	4.00	79	21.11	21.56	44.91	1.65	3.01	315	3.99
Grand Total	330	41.77	41.83	32.94	2.60	7.74	1357	4.11	264	31.17	31.47	65.56	5.50	1.88	968	3.67

Figure 2: Grafik Barber Johnson graph of IbnuSina Islamic hospital Padang for the June 2014.

DISCUSSION

In table 1 it can be seen that the most patients entered the RSI in the city of Padang is Siti Rahmah with the difference in the number of patients is 66 patients and 79 bed units. Diverting diagnoses based on ICD 10 most diagnoses at RSI Siti Rahmah were SCTPP with procedure code (74.4) of 6 patients and at IbnuSina hospital the most diagnoses were Gravid term with the diagnosis code (Z34.9) of 42 patients. Procedure grouping based on the main diagnosis at Siti Rahmah hospital is in chapter XI (disease of the digestive system as many as 51 patients and followed by chapter I (certain infectious and paracitic disease) of 50 patients. RSI IbnuSina based on the main diagnosis is in chapter XI (disease of digestive system as many as 45 patients followed by chapter XXI (influencing health factor status and contact with healt as many as 42 patients and chapter II (neoplasm) as many as 38 patients.

Based on the distribution of diagnosis frequency of ICD 10 at Siti Rahmah hospital, the most code is A91 dengue hemorrhagic fever (DHF) of 14 patients and code K35.8 (Acute Appendicitis) is 10 patients. In IbnuSina hospital, 15 patients with a code of SCTPP with procedure code 74.4 diagnosed with athergraphid followed by appendictomy with 5 patients diagnosed with appendicitis (47.09). Classification of patient distribution by region and diagnosis of RSI Siti Rahmah most patients came from Padang city as many as 194 patients with diagnosis of DHF and dyspepsia as many as 6 patients while in RSI IbnuSina the most patients came from Padang city as many as 233 patients with diagnosis of gravid atern as many as 42 patients then Padang pariaman as many as 5 patients with the most diagnoses Camamae as many as 2 patients followed by mentawai as many as 4 patients. Classification of diagnoses according to the DTD and DTD + codes in Siti Rahmah hospital. The most diagnoses are urolithiasis with DTD code (215) of 19 patients, YTK (270.9) of 15 patients and 15 DHF (032.1).

In IbnuSina Hospital, the highest number of normal pregnancy surveillance codes is DTD (294.0), 42 patients are followed by pregnancy and other births with DTD code (242.9), 17 patients.

Hospitals, like facilities or sub-facilities that provide services on a schedule basis, must balance high utilization productivity with the possibility of being fully charged and must reject service.[9] Administrators basically have three controls over these two actions: bed complements, acceptance of elective patients, and length of stay of patients in the hospital. Management problems are complicated by the various restrictions placed on beds which prevent their use by all patients and thus increase the number of beds needed. For example, bed use is limited by gender, age (pediatric, adult), services (medical, surgical, etc.), privacy (private, semi-personal, ward), and other features (intensive care units, psychiatry, perinatal, etc.).[10]

Analysis that can be taken from the collection and processing of statistical data for inpatient census of Islamic hospital in Padang city in the period of June, that is, based on the inpatient register of the Islamic hospital of Siti Rahmah Padang, obtained 330 medical records of patients while in the Islamic hospital of IbnuSina obtained 264 records medical patients for the period June 1 to June 30, 2014. The total number of inpatient services in the Islamic hospital of Siti Rahmah Padang was 1255 patients and the average day of inpatient services was 41.83 or 42 patients while in the Islamic hospital IbnuSina the total days Inpatient services are 944 patients with an average service day of 31.47 patients during the period 01 June to 30 June 2014. The BOR of the Islamic hospital of Siti Rahmah Padang obtained was 32.94% or rounded to 33 % means that during this period the percentage of bed usage was 33%. IbnuSina Islamic hospital's BOR value is at 65.56% when compared to the monthly level of BOR efficiency which ranges from 60%-85%. From the results above it means that the Islamic hospital of Siti Rahmah Padang did not achieve an efficient BOR rate while IbnuSina achieved an efficient number in the June period. The BTR for inpatients at Siti Rahmah Islamic hospital in Padang is 2.60 or 3 patients. Means that during this period each bed was used by 3 patients on average. The BTR value of patients at IbnuSina Islamic hospital is 5.50. The efficiency of the BTR cannot be seen in Islamic hospitals in the city of Padang during the June period because the BTR efficiency rate of 40-50 times is only valid for a period of 1 year. The TI (Turnover Interval) value of inpatients in the Islamic Hospital of SitiRahmah Padang is 7.74 days rounded up to 8 days. This means that the average free time to use a bed between two different people is 8 days. With the results above, it means that the Islamic hospital of SitiRahmah Padang did not achieve an efficient TI number because the efficient limit of TI was 1-3 days. While in Islamic hospital IbnuSina, the value of TI obtained was 1.88, meaning that TI in IbnuSina hospital TI was efficient during the June period. The total LOS (length of stay) of inpatients at SitiRahmah Islamic hospital in Padang was 1357 so that the average length of stay for each patient in that period was 4.11 or 4 days. The LOS efficiency of patients ranged from 6-9 days. The Islamic hospital of IbnSina's total LOS was 968 with an average of 3.67 during the June period.

From the medical aspect, the longer the number of hospitalizations can determine the performance of medical quality that is not good because patients have to get longer service.[11] From an economic aspect, the longer the stay means the patient has to pay higher fees to the hospital. So, it must be balanced between medical and economic aspects to determine the ideal value of stay.[12] Susilo and nopriadi observed an average length of stay of 8 days. Ulum and Soffie reported 2.9 days of average length of stay at Gondanglegi Islamic hospital, Indonesia in 2017.[11] Irmawati et all reported the average length of stay at BaktiWiraTamtama hospital, Semarang was 4 days in orchid rooms.[13] Shindu et all reported an average

length of stay was 10 days in 2018.[10] From the results the average length of stay was 3 days that was not efficient.[14]

CONCLUSION

From the results of data processing inpatients of Islamic hospitals in Padang in the period June 1 to June 30, 2014 it can be concluded that the Islamic hospital of IbnuSina has a BOR value of 65.56% and Turnover Interval (TI) of 2 days and declared efficient while the results of health care statistics at the Islamic hospital Siti Rahmah Padang did not reach efficient rates. This is influenced by several factors including the performance and quality of services provided at the hospital's health facilities.

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