

Dengue Hemorrhagic Fever in Jepara Indonesia: Reporting Data From The District Disease Surveillance

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Abstract. Indonesia is a tropical country vulnerable to infectious diseases, including dengue fever caused by mosquito bites. Dengue fever cases are a burden on the world because they can cause death. WHO reported that in May 2024, there were a total of 465 cases in districts/cities in 34 provinces, the national death rate until May 2024 was 777 deaths. Recording a complete medical record can support good disease reporting. This study aims to determine the distribution of dengue fever cases in Jepara district, Central Java in 2023-2024. The method of this study is descriptive. The population is disease reports in 2023 and 2024, and the sample used is the dengue fever disease report for the period January - May 2024 with random sampling techniques. Data imported from Microsoft Access is processed with a stata application and narrated descriptively. The number of dengue fever sufferers spread across 16 sub-districts is 3,549 with 1,728 male and 1,821 female sufferers. Of the 16 sub-districts, the highest number is in Pecangaan District 543 cases, and the lowest cases are in Karimun Jawa District. The category of patients based on the highest age group in category 1 (0-4 years old) was 2,136 (60.17%), with the highest mortality rate in category 2 (5-14 years old) as many as 12 people and the highest CFR at Kartini Hospital with a total of 19%, namely 12.9% in male patients and 7.24% in female patients. (dengue fever, cases, reporting).

Keywords: Dengue fever, Jepara District, Case Fatality Rate, Age group, Epidemiology

I. BACKGROUND

Electronic reporting systems have a positive impact on medical record officers' reporting, especially an electronic misreporting of dengue fever. Dengue fever is an infectious disease in the form of viral transmission transmitted through mosquito bites [1].

Dengue hemorrhagic fever contributes as a cause of death in tropical countries, such as Indonesia. Dengue fever cases are a burden on the world because they can cause death. [2][3]. Based on data from WHO as of June 2024, there are a total of 119,709 cases of dengue fever reported as many as 465 cases in districts/cities in 34 provinces, the national death rate until May 2024 is 777 deaths.[4] The number of illnesses and deaths in Indonesia due to dengue haemorrhagic fever is very high, one of which is the case in Jepara, Central Java.

Each health facility in the Jepara area sends dengue fever case reports to the health office. The data is a recapitulation of disease reports taken from patients' medical records by inputting them into a Microsoft access-based dengue reporting system. Data on patients with dengue fever diagnoses are inputted by officers based on the medical records of inpatients for the period January to May 2024. The electronic reporting system is very helpful for officers in making reports effectively and efficiently.[5][6]. Previous research has explained that reported dengue cases can be beneficial for policymakers to prevent deaths.[7].

Data from medical records not only supports administrative orders but also can be used as basic data for the prevention of dengue haemorrhagic fever and health data reporting.[3][8]. Based on the reported cases, the data is used as a basis for decision-making, as well as information on the distribution of cases per region in Jepara.

II. METHOD

The method of study is descriptive, the purpose of this study is to find out the distribution of dengue hemorrhagic fever cases in the Jepara area. The data collection was between 2023 and mid-2024 disease reports. The samples taken were dengue

hemorrhagic fever from January 2023 to May 2024, using random sampling techniques. The data collection technique is to take secondary data from Microsoft access-based dengue fever reports.

III. RESULTS AND DISCUSSION

Based on cases reported in the period January 2023 to May 2024, dengue fever cases in Jepara district are listed in Table 1.

Table 1. number of dengue fever cases by district and sex

district	sex		Total
	female	male	
BANGSRI	84	84	168
BATEALIT	58	80	138
DONOROJO	93	63	156
JEPARA	86	104	190
KALINYAMATAN	142	155	297
KARIMUNJAWA	0	1	1
KEDUNG	251	259	510
KELING	65	61	126
KEMBANG	79	89	168
MAYONG	155	162	317
MLONGGO	75	80	155
NALUMSARI	76	96	172
PAKISAJI	21	18	39
PECANGAAN	268	275	543
TAHUNAN	161	165	326
WELAHAN	114	129	243
Total	1,728	1,821	3,549

Table 1 explained that the number of dengue fever sufferers spread across 16 sub-districts was 3,549 with 1,728 male and 1,821 female patients. Of the 16 sub-districts, the highest number is in Pecangaan District with 543 cases and the lowest cases is in Karimunjawa District. Dengue fever is an infectious disease transmitted by mosquito bites [6] the spread of the case is increasing in some areas of Indonesia [3][9]nd reporting the spread of this disease helps in preventing an increase in dengue fever cases that have an impact on death. [10].

Table 2. number of dengue fever cases by health services and sex

health_services	sex		Total
	female	male	
Health services_1	187	185	372
Health services_2	205	196	401
Health services_3	82	79	161
Health services_4	702	724	1,426
Health services_5	116	118	234
Health services_6	81	105	186
Health services_7	355	414	769
Total	1,728	1,821	3,549

Table 2 explains the distribution of dengue fever cases based on health service facilities that treat patients, there are 7 health facilities with the highest number being at RA Kartini Hospital with a total of 1,426 patients.

Table 3. Distribution of cases by age category and gender

age_n Cum.	Freq.	Percent
1	2,136	60.17
60.17		
2	182	5.13
65.30		
4	1,232	34.70
100.00		
Total	3,550	100.00

Table 3 shows the distribution of cases by age category and gender, with a total of 3550 patients. The table is categorized into 4 categories, namely category 1 (0-4 years), category 2 (5-14 years), category 3 (15-44 years) and category 4 (age ≥ 45 years). The highest number of dengue fever patients in category 1 (0-4 years old) was 2,136 (60.17%) of the total patients and the lowest category 2 (5-14 years old) was 182 (5.13%).

Table 4. Patients dying of dengue fever by age and gender category

age	male	female	total
< 1 year	0	0	0
1 - 4 years	2	1	3
5 - 14 years	7	5	12
15 - 44 years	3	0	3
> 44 years	1	1	2
	13	7	20

The characteristics of dengue fever sufferers occur mostly in the age range of children because immunity is still not perfect. [11]In addition, environmental factors and parents' understanding to provide mosquito repellent lotion and protective clothing can minimize mosquito bites.[12]. The high mortality rate due to dengue fever in children is a special concern of the Indonesian government, because it is too late to get help [13].[13].

Table 5. Case fatality rate of dengue fever by health care facility

health services	m	f	total
health services 1	12,90	7,25	20,15
health services 2	13,33	5,88	19,22
health services 3	7,69	0,00	7,69
health services 4	0,00	3,70	3,70
health services 5	4,08	0,00	4,08

Table 5 shows the CRF (Case fatality Rate) of dengue fever cases based on the distribution of health facilities and gender. Of the 5 health facilities that reported the cases, the highest CFR rate was in RSUD Kartini with a total of 19%, with 12.9% in male patients and 7.24% in female patients. The CFR rate is an important concern for the Indonesian government

to reduce patient mortality due to dengue fever. [4][14]Therefore, there is a need for an expert system that can predict spikes in dengue fever rates that result in death.[6][9][15].

IV. CONCLUSIONS AND SUGGESTIONS

Based on the electronic dengue fever system reporting for the period January to May 2024 in Jepara, Central Java, it was obtained that the morbidity rate due to dengue fever was relatively high in Pecangaan sub-district with a total of 7,681 cases, based on the distribution of male patients as many as 3,620 and female 4,061. case coverage based on the highest age category in the age range of 5-14 years with 99 male patients and 91 female patients. However, the death rate of patients due to dengue fever based on the age category of 5-14 years amounted to 12 people, while the CFR rate based on health facility reports was highest at RA Kartini Hospital with 19%.

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