



Evaluation of Dengue Surveillance in Kuala Lumpur, 2024: Assessing the Timeliness and Accuracy of Suspected Dengue Case Notifications

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INTRODUCTION

Dengue is notifiable disease in Malaysia and it is mandatory to notify any suspected case within 24 hours of diagnosis. This is to allow prompt vector control implementation by district health office. This study evaluates the timeliness of dengue notifications and the sensitivity of dengue surveillance systems in Kuala Lumpur and Putrajaya.

METHODS

A descriptive analysis was conducted using data from the national online communicable disease notification system (e-Notifikasi) where all notified dengue cases from Kuala Lumpur and Putrajaya from 31 December 2023 to 29 June 2024 were downloaded and analyzed. The variables include date of diagnosis and notification, type of healthcare facilities, notification method, diagnostic test, and the reasons for case discarded. To assess sensitivity, the clinical case records were compared to notification records to identify cases that meet the clinical case definition but were not notified. Consultation files from 1 June 2024 to 29 June 2024 were selected randomly with a minimum of 50 patients per clinic from 10 primary healthcare centers (five government and five private) in Kuala Lumpur. Symptoms, signs of dengue, and testing practices were recorded.

RESULTS

A total of 31,214 dengue cases were notified and 18,477 (59%) cases were analyzed after excluding cases transferred out to other states. Only 237 cases (1%) were notified late of which 52% cases were from public hospitals. Nearly a third of late notifications (29%) originated from health facilities outside Kuala Lumpur. Less than 1% (52 out of 7,023) of cases experienced delays in case investigations due to difficulties in reaching patients. Another 387 cases (NS1 or IgM positive) could not be investigated due to failed follow-up. A sum of 11,454 (62%) notifications were discarded due to negative laboratory tests (60%), duplicates (24%), or absence of testing (13%). Of 692 consultation notes reviewed, 83 cases fulfilled dengue case definition but only 25 cases were notified, resulting in the 30% sensitivity of dengue surveillance system.

Fig.1: No of dengue notifications, cases and rate of cases registered from Epid Week 1 to 26 in 2024

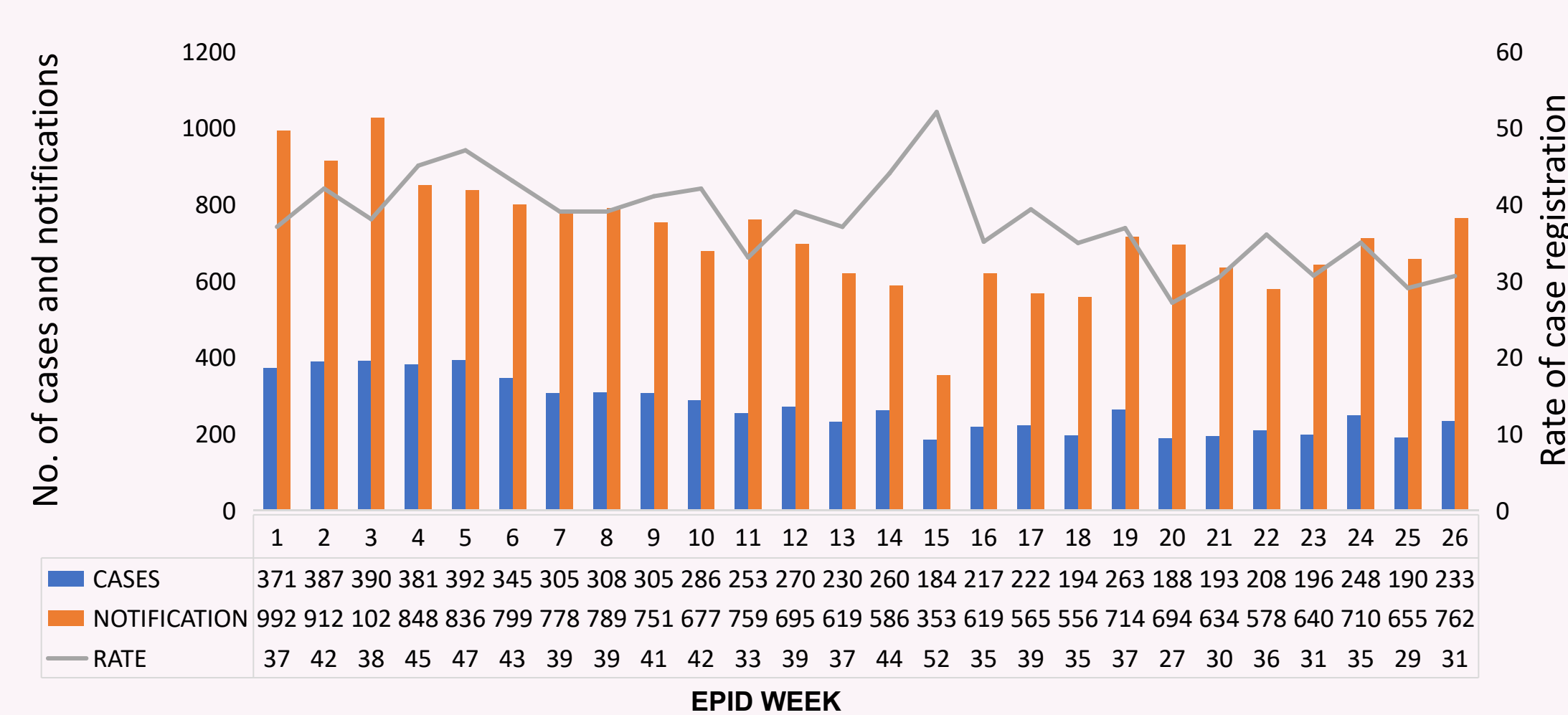


Table 2: Rate of late notifications from Epid Week 1 to 26/2024 according to DHO, type of facilities and in or outside state of Kuala Lumpur

District Health Office	No. of notifications			Public, n (%)		Private, n (%)		States, n (%)	
	Less than 24 hours	More than 24 hours	% Late						
				GP	Hosp.	GP	Hosp.	Within KL	Outside KL
Titivangsa	4,795	57	1.2	2	35	15	5	51	6
L. Pantai	4,195	101	2.4	3	50	28	20	64	37
Kepong	4,400	54	1.2	5	26	17	6	32	22
Cheras	2,115	18	0.9	0	7	9	2	14	4
Putrajaya	1,396	7	0.5	1	5	1	0	6	1
TOTAL	18,447	237	1.3	11 (5)	123 (52)	70 (29)	33 (14)	167 (71)	70 (29)

Table 1: Proportion and reasons of cases discarded from Epid Week 1 to 26/2024 according to DHO

District Health Office (DHO)	No. of notifications			Reasons to discard case, n (%)					
	Registered n (%)	Discard n (%)	Discard %	Negative result	Duplicate notification	No result	Failed follow-up		Positive IgG with other diagnosis
Titivangsa	1,817 (26)	3,035 (26)	62.6	1,554	619	189	35	9	629
L. Pantai	1,784 (25)	2,508 (22)	58.4	480	719	893	80	34	302
Kepong	1,672 (24)	2,782 (24)	62.5	1,089	695	340	42	7	609
Cheras	1,429 (20)	2,047 (18)	58.9	900	567	37	137	42	364
Putrajaya	321 (5)	1,082 (9)	77.1	750	160	3	1	0	168
TOTAL	7,023	11,454	62	4,773 (42)	2,760 (24)	1,462 (13)	295 (3)	92 (1)	2,072 (18)

Table 3: Sensitivity based on notification status of randomly selected cases reviewed in 10 chosen health facilities during Epid Week 25-26/2024 that fulfilled the clinical definition of dengue

Status of notification	Fulfilled case definition		TOTAL
	YES	NO	
Notified	25 (30)	27	52
Not notified	58 (70)	582	640
TOTAL	83	609	692

CONCLUSIONS

- Timeliness of dengue notifications is considerably good but need to identify issues in government hospitals that led to notifications more than 24 hours. This include facilities outside of Kuala Lumpur.
- Sensitivity of the dengue surveillance system is sub optimal, with a high risk of missed cases compromising the ability for prompt public health intervention.
- We recommended improved integration of diagnostic test results and follow-up mechanisms, along with continuous training. These are essential to enhance surveillance accuracy and timeliness.

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