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THE ANALYSIS OF DENGUE PREVENTION AND CONTROL PROGRAM IN BANDAR LAMPUNG, INDONESIA

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ABSTRACT
Dengue Haemorrhagic Fever (DHF) remains a major public health issue in Indonesia. In early 2025, Bandar Lampung reported a significant surge in dengue cases, largely driven by poor sanitation, flooding, and low public awareness. This study aims to analyse the implementation and challenges of the DHF prevention and control program and propose strategic recommendations for sustainable intervention. This was a qualitative study using a residency approach involving document review, field observations, and in-depth interviews with key stakeholders from the Health Office of Bandar Lampung. The study found low community participation in vector control activities, insufficient number of trained cadres (jumantik), and poor coordination across sectors. The "RT Siaga Jentik" model was proposed as a community-based surveillance strategy. Effective dengue control requires multi-sector collaboration, community engagement, and the strengthening of local capacity. Sustainable strategies such as community-led vector surveillance and intersectoral integration are crucial.

Keywords: community participation; dengue; public health program; vector control

INTRODUCTION
Dengue is a mosquito-borne viral disease that continues to pose a significant burden on public health systems, particularly in tropical countries like Indonesia. In 2024, dengue cases in Indonesia surged, with Bandar Lampung experiencing a sharp rise to 422 cases, increasing again to 67 in the first two months of 2025. Environmental factors like flooding, inadequate drainage, and stagnant water contributed to the spread of Aedes aegypti, the primary vector. Community behaviour and poor implementation of the 3M Plus strategy (draining, closing, and recycling water containers plus other measures) remain key challenges. The Bandar Lampung Health Office has implemented several programs but outcomes remain inconsistent.

METHODS
This residency-based study utilised qualitative methods through: Document review of dengue surveillance reports and program plans. Field observations at high-case areas, puskesmas, and community posts. In-depth interviews with program officers, cadre leaders, and community figures to explore program implementation, community perception, and operational barriers. Data were thematically analysed and triangulated to identify core problems and formulate interventions

RESULTS AND DISSCUSION
Additional analysis of dengue surveillance data from 2016 to 2024 in Bandar Lampung reveals fluctuating patterns. The highest case spike occurred in 2022 with 1,440 cases, followed by a sharp drop to 202 cases in 2023, and a subsequent increase to 422 cases in 2024. This trend reflects inconsistent program impact and vulnerability during certain seasons. CFR (Case Fatality Rate)

ranged from 0% to 0.3% over nine years. Notably, CFR was 0% in 2017 and 2023, but increased to 0.2% in both 2022 and 2024, indicating periods of heightened severity despite interventions.

The Larvae-Free Index (Angka Bebas Jentik – ABJ) improved gradually from 84% in 2016 to a peak of 93% in 2023, before declining slightly to 90% in 2024. This decline suggests a need for consistent and sustained larval surveillance. A five-year comparison with provincial data (2020–2024) shows that Bandar Lampung's trends mirrored broader patterns in Lampung Province. However, the city showed lower mortality, with only one recorded death in 2024. The province experienced a dramatic rise in cases to 9,096 in 2024 with 31 deaths, indicating regional coordination challenges. Using the USG method, low community participation in PSN (15 points) was identified as the top priority issue, followed by inactive jumantik cadres (13 points) and delayed case reporting (12 points). Key barriers include limited awareness, environmental factors (e.g., poor sanitation, stagnant water), and weak multisector collaboration.

The one-month residency at the Bandar Lampung Health Office provided valuable insights into the management of dengue control programs. Historical data over the past nine years shows fluctuating trends, with major spikes in 2022 (1,440 cases) and a rebound in 2024 (422 cases), despite a major drop in 2023. Although the Case Fatality Rate (CFR) has remained under control (<0.3%), the recurrence of outbreaks reflects systemic issues in sustaining vector control. Key program challenges include low public compliance with 3M Plus behavior, insufficient active jumantik cadres, environmental conditions conducive to vector breeding, delayed case response mechanisms, and suboptimal cross-sector collaboration. Although the Larva-Free Index (ABJ) rose to 93% in 2023, it slightly dropped in 2024, suggesting inconsistent community practices.

Prioritization using the USG (Urgency, Seriousness, Growth) method highlighted the top issue: poor community participation in PSN as the most urgent and influential factor (score: 15). Other pressing issues include inactive cadres (score: 13) and slow case reporting (score: 12). Environmental issues such as poor sanitation, ineffective waste management, and unsealed water storage remain breeding grounds for Aedes aegypti. Meanwhile, coordination between health, education, environmental departments, and local leaders is sporadic and lacks structured integration.

Innovative models like "RT Siaga Jentik" have shown promise but have yet to scale up across all kelurahan. Financial limitations, lack of cadre training, insufficient health promotion campaigns, and absence of sustainable CSR contributions further hinder effectiveness. The analysis confirms that strengthening vector control requires a decentralized, multisectoral strategy with behavioral change at the community level as a core pillar. Emphasis must also be placed on empowering jumantik cadres through structured training, fair incentives, and logistic support, while improving rapid surveillance, reporting systems, and environmental sanitation.

CONCLUSIONS

Dengue prevention in Bandar Lampung requires systemic, community-based interventions supported by intersectoral coordination. Strengthening cadres, fostering local ownership, and sustaining behavioural change through education and incentives are key. Despite various interventions such as fogging, larvicide distribution, education campaigns, and deployment of jumantik cadres, dengue cases in Bandar Lampung remain unstable, with a spike recorded in 2024. This indicates that technical approaches alone are insufficient. The core issue lies in low community engagement in the “3M Plus”

activities and limited understanding of environmental vector control.

The main objective of the dengue prevention program is to significantly and sustainably reduce case numbers by enhancing community participation, strengthening the capacity of jumantik cadres, and optimising community-based and cross-sector vector control systems. This requires a participatory and decentralised approach, involving all stakeholders—residents, schools, religious institutions, and businesses. Key strategies include regular training and fair incentives for cadres, improving case reporting systems, and integrating dengue surveillance into broader public health coordination. With stronger collaboration among health, education, environmental sectors, and local governance, Bandar Lampung aims to become more resilient against dengue outbreaks through long-term, sustainable prevention efforts.

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