

PENYUSUNAN INDIKATOR PREDIKSI KEJADIAN LUAR BIASA DEMAM BERDARAH DENGUE DI KABUPATEN HULU SUNGAI UTARA PROPINSI KALIMANTAN SELATAN

MURNIYATI

Pembimbing : Lucia Y. Hendrati, S.KM, M.Kes

INDICATOR;DENGUE HEMORRHAGIC FEVER

KKC KK TKA 02 / 10 Mur p

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SUMMARY

THE REQUIREMENT OF DENGUE HEMORRHAGIC FEVER
OUTBREAK PREDICTIVE INDICATOR AT SOUTH KALIMANTAN
HULU SUNGAI UTARA REGENCY

Dengue Hemorrhagic Fever (DHF) is a major public-health issue in Indonesia which often leads to high-mortality outbreaks. The disease is caused by the *dengue* virus which is transmitted to humans via bites by the *Aedes aegypti* mosquito as primary-vector and the *Aedes albopictus* mosquito as secondary-vector. The trend in Indonesia for DHF cases is on the incline both in terms of case-count and infection-coverage with sporadic outbreaks occurring annually

DHF outbreaks are the most often occurring disease-related incidents at the South Kalimantan Province Hulu Sungai Utara Regency where the trend in the past five years in terms of the case-count and the infection-coverage are on the increase. 9 (nine) cases in 2005, 65 (sixty-five) cases in 2006, 115 (one-hundred and fifteen) cases in 2007, 38 (thirty-eight) cases in 2008, and 129 (one-hundred twenty-nine) cases in 2009 involve 16 (sixteen) outbreaks.

With attention to the DHF surveillance objective which is to predict and prevent outbreaks, whether the problem here formulated can lead to a solution for the requirement for an indicator predictive of outbreak risk-areas in the attempt to prevent and control the disease becomes the question here.

The objective of this research is to analyze factors influencing DHF outbreaks and formulate a model for a DHF outbreak predictive-indicator at the South Kalimantan Province Hulu Sungai Utara Regency.

This is a Case-Control research which utilizes primary-data and secondary-data. The population-density and community awareness of and attitude toward DHF comprise the primary-data and rainfall-rate, number of rain days, stratification of DHF-prone villages or localities, Larva-Free Count (LFC), public-venues or -facilities that meet health-standards, population-density, diagnostic response-time, hospitalization treatment-time, and field treatment-time comprise the secondary-data. A village or locality constitutes a single unit for analysis generating a total sample-count of 32 (thirty-two) units of analysis with 16 (sixteen) case-units and 16 (sixteen) control-units.

The primary-data is collected via direct-interviews with 320 (three-hundred and twenty) heads of households at 10 (ten) heads of households per unit of analysis. The secondary-data is collected from the South Kalimantan Province Hulu Sungai Utara Regency Department of Health and PHCs and the Department of Meteorology and Geophysics Banjarbaru Climatology station.

The findings reveal a significant correlation between 8 (eight) of the variables analyzed and DHF outbreaks. These 8 (eight) variables are rainfall-rate, stratification of DHF-prone villages or localities, LFC, public-venues or -facilities that meet health-standards, population-mobility, diagnostic response-time, and field treatment-time. The DHF outbreak predictive-model fit-test reveals that LFC, population-mobility, diagnostic response-time, and field treatment-time fit. The generated values of the predictive-model are $-5.709 - 2.739 (\text{FLC}(1)) + 1.013 (\text{Population Mobility}) + 1.141 (\text{Diagnostic Response-Time}) - 4.793 (\text{Field Treatment-Time}(1))$.

The FLC, population-mobility, diagnostic response-time and field treatment-time can be utilized as indicators for predicting areas that are at risk of DHF outbreaks and areas that are not at risk of DHF outbreaks. This model can be utilized as a DHF outbreak early-warning system.

ABSTRACT

Dengue Hemorrhagic Fever (DHF) is a major public-health issue in Indonesia which often leads to high-mortality outbreaks. The trend in Indonesia for DHF cases is on the incline both in terms of case-count and infection-coverage with sporadic outbreaks occurring annually. DHF outbreaks are the most often occurring disease-related incidents at the South Kalimantan Province Hulu Sungai Utara Regency where the trend in the past five years in terms of the case-count and the infection-coverage are on the increase. With attention to the DHF surveillance objective which is to predict and prevent outbreaks, the objective of this research is to analyze factors influencing DHF outbreaks and formulate a model for a DHF outbreak predictive-indicator at the South Kalimantan Province Hulu Sungai Utara Regency. This is a Case-Control research which utilizes primary-data and secondary-data. The population-density and community awareness of and attitude toward DHF comprise the primary-data and rainfall-rate, number of rain days, stratification DHF-prone villages or localities, Larva-Free Count (LFC), public-venues or -facilities that meet health-standards, population-density, diagnostic response-time, hospitalization treatment-time, and field treatment-time comprise the secondary-data. A village or locality constitutes a single unit of analysis generating a total sample-count of 32 (thirty-two) units of analysis with 16 (sixteen) case-units and 16 (sixteen) control-units. The primary-data is collected via direct-interviews with 320 (three-hundred and twenty) heads of households at 10 (ten) heads of households per unit of analysis.

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Keywords: Indicator, Outbreak, Dengue Hemorrhagic Fever

