International Seminar on
Global Strategy to Combat Emerging Infectious Diseases in Borderless Era

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Date, August 1st 2016

To.
drh. Tri Wulandari Kesetyaningsih, MKes.
Universitas Muhammadiyah Yogyakarta
Indonesia

ABSTRACT ACCEPTANCE LETTER

Dear drh. Tri Wulandari Kesetyaningsih, MKes.

We are pleased to inform you that submitted abstract as specified below :

"Environmental Factors Related to Dengue Hemorrhagic Fever in Sleman District, Yogyakarta, Indonesia"
Authors: Tri Wulandari Kesetyaningsih, Sri Andarini, Sudarto and Henny Pramoedyo

has been officially accepted for **oral presentation** in International Seminar on Global Strategy to Combat Emerging Infectious Disease in Borderless Era (GSEID 2016) which be held in Surabaya on August 8-9th, 2016.

Please make bank transfer payments payable to :
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After you have paid your registration fee, please send us the proof of payment to gseid2016@gmail.com. You are requested to complete your registration payment before no latter than **August 3rd 2016**. If you do not complete your registration by the deadline, your abstract will not be included in this conference.

We are looking forward to welcoming you in Surabaya.

Yours Sincerely,

Dr. Soedarsono, dr., Sp.P(K)
Chair of the Organizing Committee
Email : ssoedarsono@gmail.com
sdspulmo@yahoo.com

Environmental Factors Related to Dengue Hemorrhagic Fever in Sleman District, Yogyakarta, Indonesia

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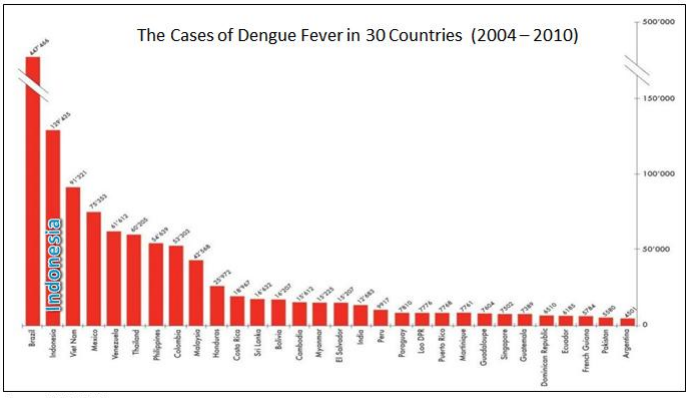
Dengue is a disease related to the environment. This study aims to identify the environmental conditions associated with dengue. The independent variables were elevation, land cover and climate. This ecological study was conducted on five sub-districts selected based on the trend of the incidence. Land cover and elevation data obtained using GIS from Quickbird imagery and digital maps. Climate data were obtained from Meteorology and Climatology Agency of Yogyakarta. There were 1,150 dengue cases from 2008-2013 obtained from District Health Office. The results show that spatial patterns were clustered in all sub-districts (Z score <-2.58). There were negative correlation between land cover (p = 0.000; r = -0.837) and elevation (p = 0.000; r = -0.127) with dengue. *Multiple Regression Test* shows the effect of humidity (p = 0.000) and precipitation (p = 0.002) in endemic area with a contribution of 13.5% - 27.4%. Temperature has no effect in all districts (p> 0.05). It was concluded that dengue in Sleman was clustered and associated with the environment parameters. The higher area and the wider building area were consistence with the lower the incidence. Climatic factors that influence are humidity and precipitation, not temperature.

Keywords: ***dengue, climate, land cover, elevation, spatial pattern***

Environmental Factors Related to Dengue Hemorrhagic Fever in Sleman District, Yogyakarta, Indonesia

Tri Wulandari Kesetyaningsih
Sri Andarini
Sudarto
Henny Pramoedyo

- Indonesia is second ranks in the world after Brazil



Source: WHO, 2012

The Aim and Benefit of Research

- To reveal the environment characteristic that plays the role in dengue
- As the input in considering of development plan to prevent the expanding endemic area
- As reference to develop the early warning system of dengue outbreak

Results

- Study area

Fig.1. Study site : Sleman district is in Yogyakarta SR, Java Island, Indonesia

Discussion

- **Spatial Pattern**
  - **Clustered**
    - Near area have similar character of physics and social environment (Wieczorek and Delmerico, 2009).
    - Easier to determine the source of disease (Lai *et al*, 2009)
    - Clustered in DHF
      - Supported by **bionomic of Aedes**
        - » Anthropophilic (Ponlawat and Harrington, 2005), endophagic dan endophilic (Rodrigues *et al*, 2015)
        - » Short distance flight 50-100 m (Supartha, 2008).
        - » Interrupted feeding behavior (Harrington *et al* , 2014; Delatte *et al*, 2010).
  - **Mean**: Indigenous disease in Sleman