APPLICATION OF DYNAMIC TRANSMISSION VECTOR MODELS AND KNOWLEDGE SHARING TO DETERMINE THE SPREAD AND PREDICTION OF DENGUE FEVER EPIDEMIC

Research Exeucion: Retno Widyaningrum
NRP: 2509100010

ABSTRACT

Increasing number of dengue cases in Surabaya shows that Surabaya is a city with the potential spread of dengue fever epidemic. Some policy which was designed by the Health Department such as fogging, abate seae, and Pemberantasan Sarang Nyamuk still out of target because of inaccurate predictions.

Ineffectiveness eradication of dengue fever epidemic caused of lack of information and knowledge on environmental conditions in Surabaya. Developing spread and prediction system to minimize spread of dengue fever is necessary conducted. Spread and prediction system can improve eradication, prevention, and design spread map of dengue fever epidemic. The online spread and prediction system of dengue fever epidemics will design with knowledge management system (KMS) website based which can be a media of a sharing knowledge.

The Transmission Dynamics Vector simulation will use as an approach that used to drawn a complex system and mosquito life cycle which involved a lot of factor that can predict spread of dengue fever epidemics at a time period.

The output of this research is website of spread and prediction system of dengue fever epidemics to predict growth rate of Aedes agepthy mosquito, infected and death population of dengue fever epidemics. Dynamics transmission model used to build model in mosquito model (oviposition rate and pre adult mosquito), infected and death cases in dengue fever. The model of mosquito and infected population can represent system. The deviation of infected population is 0,519. The model of death cases in dengue fever is less precision with the deviation 1,229. Death cases model need improvement by adding some variables that influence to dengue fever death cases. Spread of dengue fever prediction will help the government, health department to decide the best policies in minimizing the spread of dengue fever epidemics.

Keywords: Dengue Fever Epidemic, Knowledge Sharing, Transmission Dynamics Vector