
Dynamic of the 2011-2012 Hand, Foot and Mouth Disease in Hai Phong city, Vietnam

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Résumé

Hand, foot and mouth disease (HFMD) is an acute febrile illness in children with a papulovesicular skin rash at the palms or soles of the feet, or both. HFMD is caused by members of Human Enterovirus A family of viruses which include Coxsackievirus A (CVA) and Human Enterovirus 71 (EV71). A large scale HFMD epidemic was reported for the first time between 2011 and 2012 in Northern Vietnam. We focus our attention on the large city-harbour of Hai Phong.

Two main aspects were studied.

The first consisted of determining and understanding the high level of diversity of the clinical signs using the three most solid clinical quantitative parameters; i.e., age, severity score and delay of time of onset to admission from the clinical data set of the 10000 observed cases. A hierarchical classification approach was used to cluster the patients into groups of common symptoms and analyze their distribution over the span of the epidemic. The second consisted in analyzing the spread of HFMD according to time and space. The commune is the smallest subdivision of Hai Phong City. Using the commune for geographical localization and the time distribution of the detected cases, recording was done in Geographic Information System (QGIS). The data were used to create a graph that modelised the outbreak of

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HFMD. Numerical analyses were investigated to determine some group of communes that presented similarities concerning the spatial dynamic of HFMD.

Mots-Clés: HFMD, modelling, epidemiology, HFMD, EV71