Abstract

Spatio-Temporal model of respiratory virus Influenza, RSV and SARS CoV2 from climatic variability in Cuba's climate tropical

Yazenia Linares Vega

Provincial Meteorological Center of Havana, Cuba

Abstract:

Acute respiratory infections (ARI) are the leading cause of morbidity and mortality worldwide, mainly in young children and in immuno compromised and elderly patients. Respiratory viruses are the main etiology of respiratory disease worldwide, it is estimated that 90% of ARIs are related to viruses. In Cuba, the highest% of positivity is provided by Influenza, RSV and of positivity is provided by Influenza, RSV and currently SARS CoV2, which is generating the largest pandemic. The significant increase in climate anomalies produced by anthropogenic climate change leads to changes in the multiplicative capacity of the virus and in its circulation, both on a temporal and spatial scale. Therefore, forecasting the viral dynamics would allow the decision makers of the health system to take the necessary measures to control it. Obtaining seasonal models for the prediction and early warning of the impact of climate variability on influenza, RSV and SARS CoV2 viruses both on a temporal and spatial scale in Cuba is an essential objective. An ecological study was carried out with retrospective-prospective analysis of the virus series and the climatic anomalies described by the climatic indices of Bultó for the period 2010-2020.

Conclusions: Both temporal and spatial models are obtained for the prediction and early warning of the circulation of the influenza viruses, RSV and the recent SARS CoV2, conditioned by the impact of seasonal climate variability with high reliability. This model methodology could be used in other respiratory viruses.

Biography

Yazenia Linares Vega is meteorologist of Institute of Meteorology Cuba, researcher in climate and human health, specifically in models of spatial prediction of infectious diseases from climate conditions. Has given countless conferences, workshops, Professor on the topic of infectious diseases and climate change and variability. She is a PhD assistant in topic: Effect of climate on dynamics and circulation of viruses, as well as its prediction of viral spread. Has several publications in the theme. She collaborates with several institutes of Tropical Medicine IPK, Institute of Hygiene, Epidemiology and Microbiology and Universities both Environmental and Health. She has worked on a range of issues related to the potential health impacts of climate variability and change, including impacts associated with vector-borne diseases, transmission diseases, extreme events (flooding), food -borne diseases and virus. Also, she conducts research on the potential health impacts in different countries and worked as consultant for elaboration of documents the national communications. Research Interest: Climatology, microbiology and virology sciences, mathematical modeling and infectious diseases from climate.

Publications:

1. Benguigui Y, 2002. As infecções respiratórias agudas na infância como problema de saúde pública. Boletim de Pneumologia Sanitária;10(1):13-22

2. Rahman M, Wong K, Hanafiah A, Isahak I, 2014. Influenza and respiratory syncytial viral infections in Malaysia: Demographic and clinical perspective. Pak J Med Sci. 30(1):161-5