Geophysical Research Abstracts
Vol. 21, EGU2019-12072-1, 2019
EGU General Assembly 2019
© Author(s) 2019. CC Attribution 4.0 license.

Using Satellites to Predict the Spread of Cholera

Claire McDonald (1), Moiz Usmani (1), Antarpreet Jutla (1), and Rita Colwell (2)

(1) West Virginia University, Civil and Environmental Engineering, Morgantown, United States (cm0023@mix.wvu.edu), (2) University of Maryland, College Park, United States

Cholera is a waterborne disease caused by Vibrio Cholerae that affects places with poor WASH infrastructures. A majority of outbreaks occur in coastal regions, indicating there is a correlation between the environment of an area and the occurrence of the disease. Yemen is experiencing one of the largest outbreaks of cholera, whose collapsing water infrastructure is contributed to the ongoing Yemeni Civil War. The occurrence and growth of the Vibirios can be linked to climatic variables, which can be used to develop a mathematical model to predict the risk of cholera for an area. Using satellite derived data on precipitation, temperature, population density and the available water and sanitation infrastructure, a near real time algorithm is developed to predict the risk of an outbreak of cholera for an area. In this study, the risk of cholera for Yemen is produced four weeks in advance.