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Scientists use remote satellite imaging to predict outbreaks of infectious disease

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Scientists in the USA have established a way to predict outbreaks of cholera, making it easier to control. This finding could provide a model to predict and potentially control outbreaks of other important infectious diseases.

Cholera is a serious, ancient water-borne infectious disease, which is an unpredictable and severe problem for developing countries.

The bacterium that causes cholera, *Vibrio cholerae,* has a known association with a crustacean (called a copepod) which lives on zooplankton, a type of plankton. Cholera outbreaks have been linked with environmental factors, including sea surface temperature, ocean height, and biomass (this is estimated by measuring chlorophyll produced by plankton). Professor Rita R. Colwell and her team at the University of Maryland, College Park, have used remote satellite imaging to track this climatologically important information and the data collected now can be used to predict outbreaks of cholera before they occur.

Cholera epidemics have been episodic, so the ability to predict them could be one further step towards controlling this serious, water-borne disease by providing rapid response public health measures. The climate factors shown to be associated with cholera also play a role in many other infectious diseases. So this development offers a useful model for understanding human health effects related to climate change.

"We are now beginning to understand infectious disease is a moving target," said Colwell. "As the climate shifts, any disease with an environmental stage or vector is going to be affected." Colwell will call for an integrated approach of global scientific paradigms to track and tackle infectious disease: "We must protect this blue planet" she said "it's the only one we've got".

Source: Wiley

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