# Mitigating disease outbreaks

With the Zika virus recently declared a 'public health emergency' by the World Health Organisation (WHO), authorities are turning to smart mapping technology to learn more about the disease ravaging the Americas and threatening other tropical and sub-tropical regions across the globe.

Smart mapping, or Geographic Information System (GIS) technology, provides important insights for public health workers and specialists trying to respond to, and limit the spread of disease.

The capacity to consolidate data from multiple systems – linking records through their common geography – and present information in the form of a dynamic map enables GIS users to analyse, visualise and detect patterns and trends that might otherwise be missed by other types of analysis.
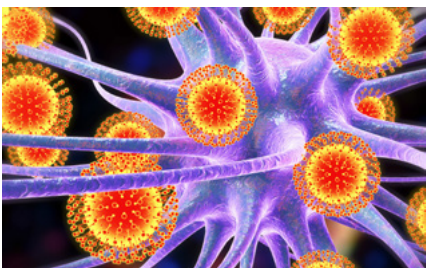
Currently, smart mapping technology is being used as a tool to raise awareness about the Zika virus and the populations impacted.

The technology also has the capacity to track an outbreak and act as an active disease surveillance system – as it did during the 2014-15 Ebola crisis and the 2002-03 SARS emergency.

During the Ebola outbreak, GIS technology was used to evaluate the spread of the disease, map the locations of site treatment units and specialty labs, and understand cultural practices around burials, languages spoken and transportation routes.

This information aided the effective allocation of resources and facilities for diagnosis, treatment and care of infected patients.

In Hong Kong, at the peak of the SARS crisis, GIS technology provided a platform to keep the community informed – allowing residents to view an authoritative smart map and check which buildings and neighbourhoods had recorded – or were suspected of having – cases of SARS.

By seeing this information in a visual context, residents were able to make well-informed decisions to help protect themselves and their families from infection.

In our increasingly globalised world – where international trade and travel take place 24/7 – the risk of widespread disease outbreaks remains a constant threat.

Because of this, advanced technologies like smart mapping will continue to play a critical role in ensuring health authorities are better prepared and equipped to respond to such emergencies.

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