

Study shows how Ebola becomes lethal as it spreads

January 21 2015



A scanning electron micrograph of Ebola virus budding from a cell (African green monkey kidney epithelial cell line). Credit: NIAID

Scientists investigated why Ebola virus is so deadly when it spreads from animals to humans and then from human-to-human contact. The research team looked at the Zaire Ebola strain in an animal system to understand how it gains strength. This virus is responsible for the current outbreak in West Africa.

They found that initially the animal systems were not affected by the [virus](#), but subsequent transmission into other animals caused the virus to 'hot up' and become more severe.

The team analysed the viruses at different stages and were able to identify several changes in its genetic material that were associated with increased disease.

Professor Julian Hiscox, who led the study from the University's Institute of Infection and Global Health, explains: "The work tells us that the evolutionary goal of Ebola virus is to become more lethal.

"We were able to show through genetic analysis which parts of the virus are involved in this process. The information we have gathered will now allow us to monitor for such changes in an outbreak as well as develop future treatment strategies."

Professor Roger Hewson, leading the study from Public Health England, Porton Down, said: "Ebola virus is such a devastating infection to the people affected by the disease and the economy of West Africa.

"Our understanding of Ebola virus biology is way behind that of other viruses and our collaboration shows how we can bring together our specialists skills to close this knowledge gap."

Professor Miles Carroll, a co-author of the work, said: "This study has allowed the team to be at the forefront of developing methodologies to analyse patient samples recently taken by the European Mobile Laboratory from West Africa to understand disease evolution during the current outbreak"

The research is published in the journal *Genome Biology*.

Provided by University of Liverpool

Citation: Study shows how Ebola becomes lethal as it spreads (2015, January 21) retrieved 25 April 2024 from <https://medicalxpress.com/news/2015-01-ebola-lethal.html>

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