

# African Swine Fever spread across Asia, 2018—2019

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## Abstract

African Swine Fever Virus (ASFV) is a highly contagious pathogen causing disease in pigs, commonly characterised by acute haemorrhagic fever. Prior to August 2018, African Swine Fever (ASF) had not been reported in Asia, but has since spread throughout China, Mongolia, Korea, Vietnam, Laos, Cambodia, Myanmar, the Philippines, Hong Kong, Indonesia, Timor-Leste and Papua New Guinea. Using data collated from reports of confirmed cases, we applied spatio-temporal analysis to describe ASFV spread throughout Asia, from 1 August 2018 (reported start date) to 31 December 2019. Analysis revealed a propagating epidemic of ASFV throughout Asia, with peaks corresponding to increased reports from China, Vietnam and Laos. Two clusters of reported outbreaks were found. During the epidemic, ASFV primarily spread from the North-East to the South-East: a larger, secondary cluster in the North-East represented earlier reports, whilst the smaller, primary cluster in the South-East was characterised by later reports. Significant differences in country-specific epidemics, morbidity, mortality and unit types were discovered, likely attributable to differences in prevention, surveillance and control measures. The initial number of outbreaks and enterprise size are likely predictors of the speed of spread and the effectiveness of ASFV stamping out procedures. Biosecurity methods, wild boar populations and the transportation of pigs and movement of infected fomites are discussed as likely risk factors for facilitating ASFV spread across Asia.

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