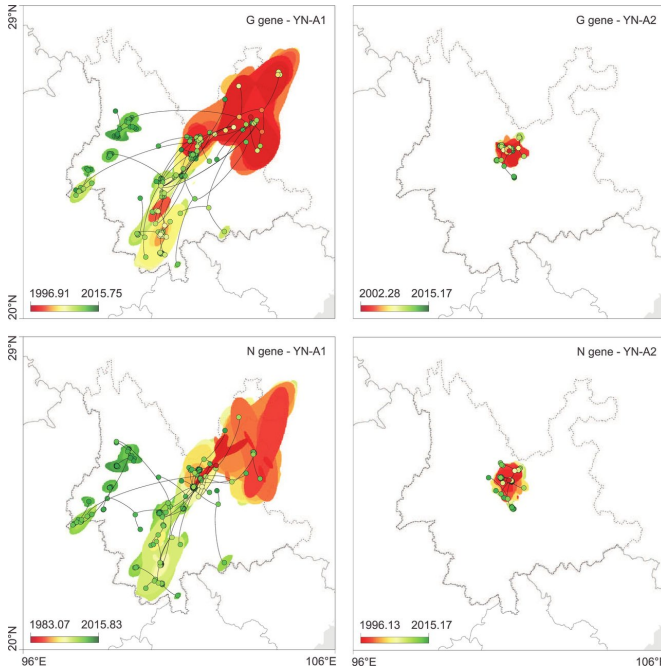


Interventions in dog populations could reduce rabies in rural China

6 December 2018



Spatiotemporal diffusion of Yunnan RABV clades estimated from continuous phylogeographic reconstructions. Credit: Tian H, *et al.* (2018)

Domestic dogs play a key role in the transmission and expansion of rabies in rural areas of China, according to a study published December 6 in the open-access journal *PLOS Pathogens* by Huaiyu Tian of Beijing Normal University, Hailin Zhang of the Yunnan Provincial Key Laboratory for Zoonosis Control and Prevention, Simon Dellicour of KU Leuven, and colleagues.

Despite ongoing efforts to [control](#) transmission, rabies prevention remains a challenge in many [developing countries](#), especially in rural areas of China where re-emerging rabies is under-reported due to a lack of sustained animal surveillance. Although dogs are known to be the primary reservoir and vector of human rabies in African and Asian countries, the epidemiology of rabies virus

spread in developing regions is still unclear. These uncertainties hamper improvements in disease control strategies and the evaluation of control measures. Taking advantage of detailed genomic and epidemiological data for the re-emerging rabies outbreak in Yunnan, a rural province of China, collected between 1999 and 2015, the authors reconstructed the demographic and dispersal history of the rabies virus in [domestic dogs](#) and estimated the transmission rate between dogs and from dogs to humans.

Epidemiological analyses revealed that transmission rates between dogs, as well as between dogs and humans, are lower than estimates for Africa. The reconstructed epidemic history of the rabies virus among dogs and the dynamics of rabid dogs were consistent with recorded human rabies cases. The results indicate that interventions in the dog population would be effective in reducing transmission to humans, in particular because they have the potential to subvert the self-sustaining capacity of epidemics in dogs. "We reconstruct the recent dispersal history of RABV in domestic dogs in Yunnan, a rural province of China, and estimate RABV [transmission](#) rate between dogs and from [dogs](#) to humans," notes Tian. According to the authors, a better understanding of rabies virus spread is necessary to help inform the prevention and control of human rabies in the vast rural areas of China.

More information: Tian H, Feng Y, Vrancken B, Cazelles B, Tan H, Gill MS, *et al.* (2018) Transmission dynamics of re-emerging rabies in domestic dogs of rural China. *PLoS Pathog* 14(12): e1007392. doi.org/10.1371/journal.ppat.1007392

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