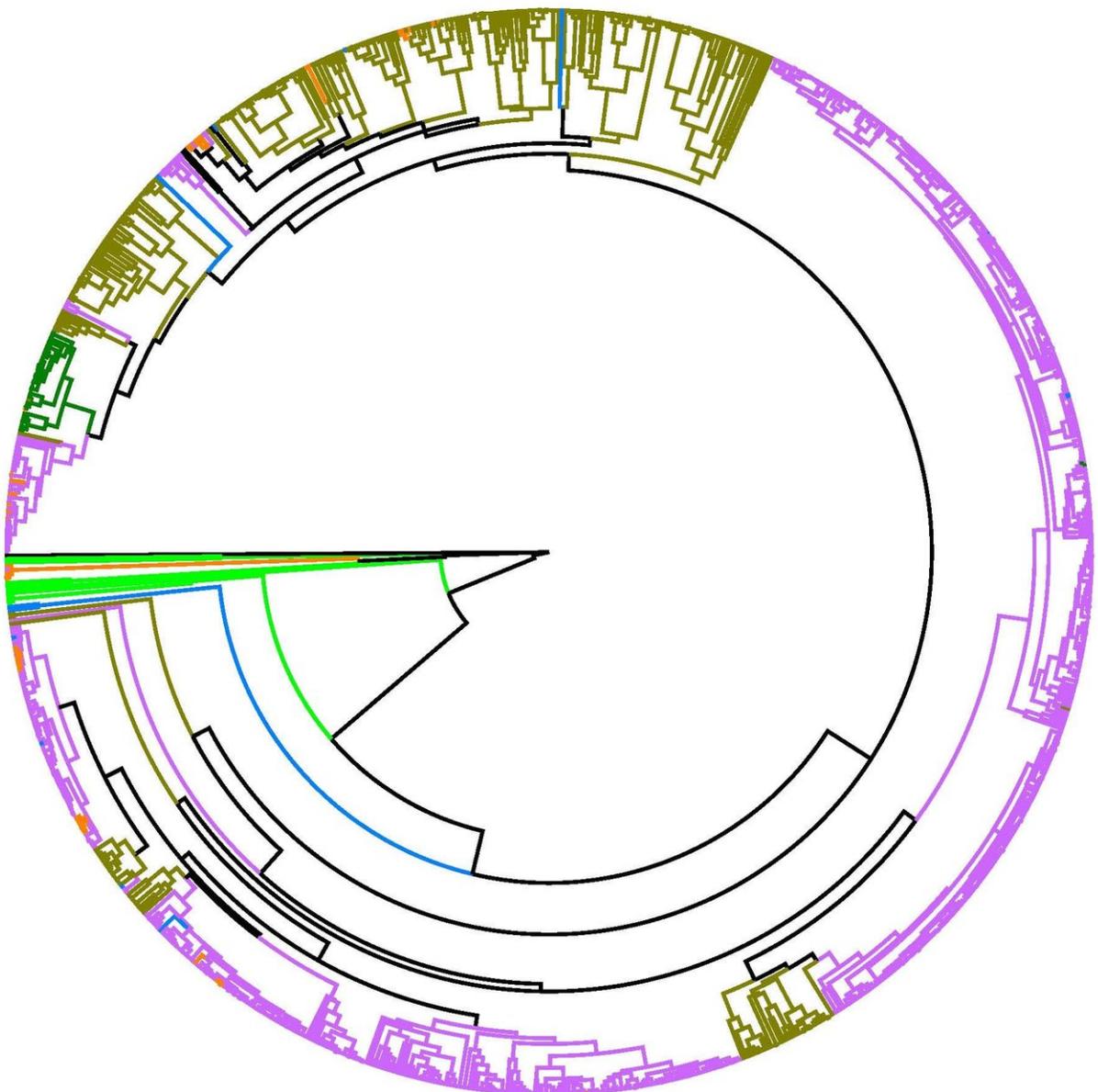


Human activity may influence the distribution and transmission of *Bartonella* bacteria

November 15 2018



Circular phylogenetic tree of *Bartonella* Credit: Frank, *et al.* 2018

Bartonella bacteria are disease-causing, blood-borne pathogens found in various mammal species. A study in *PLOS Neglected Tropical Diseases* by Hannah Frank and colleagues at Stanford University, California suggests that humans play an important role in disease risk, infection patterns, and distribution of *Bartonella*, advancing current understanding of *Bartonella*'s evolutionary history and how the bacteria may be transmitted between humans and other animal species.

Cross-species *Bartonella* transmission poses a threat to public health, wildlife, and domestic [animals](#). However, the evolution of *Bartonella* strains and mechanisms of cross-species transmission are not well understood. To determine the bacteria's evolutionary history and global distribution, researchers constructed global phylogenies using sequences accessed from public databases and built models to test their hypotheses. Additionally, they analyzed instances of *Bartonella* spillover from animals to humans using genetic isolates and case data collected from scientific literature.

The authors note that "phylogenetic inferences about the origin of infections should be interpreted with caution as they are heavily influenced by available data and the taxa that have been sampled." More data are needed to verify findings and fill in remaining knowledge gaps. However, their study advances scientific understanding of human impacts on the spread of infectious disease: "In thinking about [disease](#) transmission between animals and humans, we often focus on the animals as the source of new [human](#) infections and not the role of the humans in influencing their own risk. Our findings suggest that humans

play a significant role in changing [infection](#) patterns not only for ourselves but for our domestic animals and wildlife, too."

More information: Frank HK, Boyd SD, Hadly EA (2018) Global fingerprint of humans on the distribution of Bartonella bacteria in mammals. *PLoS Negl Trop Dis* 12(11): e0006865.
doi.org/10.1371/journal.pntd.0006865

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Citation: Human activity may influence the distribution and transmission of Bartonella bacteria (2018, November 15) retrieved 11 May 2024 from
<https://medicalxpress.com/news/2018-11-human-transmission-bartonella-bacteria.html>

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