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Circulation of Nipah virus at the human–Flying fox interface in Cambodia

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Background: Nipah virus (NiV) is an emerging pathogen that, unlike other priority pathogens identified by WHO, is endemic to Southeast Asia. It is transmitted through exposure to saliva, urine or excrement from *Pteropus* fruit bats or direct contact with intermediate animal hosts or human-to-human transmission. However, little is known about the circulation of NiV and its epidemiology in Cambodia.

Methods and materials: An integrated approach was undertaken at two flying fox roosts in Kandal and Battambang provinces to study bat ecology, NiV circulation in bat and human population and human practices and perceptions from 2013 to 2016.

Results: Our integrated study allowed us to generate extensive data on the different components of the complex socio-ecosystem of NiV. Flying fox population monitoring showed that mating, birthing and weaning periods occurred at the same periods each year: mating in November, birthing in April and weaning in June. A total of 20/3157 (0.63%) and 8/773 (1.03%) bat urine samples in Kandal and in Battambang were respectively confirmed positive for NiV by RT-PCR. Detection rate of NiV was higher during pregnancy and lactation phases between March and May. Pollen from flowers were identified in a majority of bat faecal samples from December to March while fruits were identified when NiV was detected in urine. GPS study showed that the maximum distance travelled per night ranged from 6.88-105 km. Most foraging locations were in residential areas and plantations. Sera collected from 164 people residing in Kandal and 254 people living in Battambang tested negative for NiV antibodies. Knowledge, attitude and practice survey reported some human practices could lead to exposure to NiV including eating partially eaten fruits, consumption of palm juice and hunting and consuming bats.

Conclusion: Our findings help provide recommendations to interrupt potential transmission routes and limit the risk of emergence through environmental and behaviour changes.

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Misdiagnosis of Babesiosis as Malaria, Equatorial Guinea, 2014

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Background: We report a case of babesiosis, caused by *Babesia microti*, in a missionary who worked in Equatorial Guinea but also visited rural Spain. The initial diagnosis, based on clinical features and microscopy, was malaria. The patient's recovery was delayed until she received appropriate treatment for babesiosis.

Case description: *Babesia* parasites are naturally transmitted by ixodid ticks; the parasites invade erythrocytes, causing babesiosis in animals and humans. The disease can be clinically silent or can progress to a fulminant malaria-like disease. Of the 4 characterized *Babesia* species involved, *B. microti* is the one that mostly infects humans and is found worldwide; most cases occur in the United States (1). Babesiosis in humans in Africa has rarely been reported.

Discussion: In March 2014, a 43-year-old woman with fever, chills, fatigue, and general malaise was admitted to the General Hospital of Douala, Douala, Cameroon. Giemsa-stained blood smears showed intraerythrocytic parasites, leading to a diagnosis of malaria. The patient, who had previously had malaria, was given dyhydroartemisin plus primaquine, improved slightly, and was discharged. A few days later, she was admitted to the Hospital La Paz in Bata, Equatorial Guinea, with similar symptoms. Over an 8-month period, she received 6 consecutive diagnoses of malaria; treatment with quinine, artemether, atovaquone/proguanil, or artemether/lumefantrine led to no clear improvement. Because all antimalarial therapies had failed, the patient's case was reevaluated.

Conclusion: In such regions, where infrastructure and resources are limited, molecular and serologic diagnostic methods are usually lacking, and diagnoses of febrile diseases are based on symptoms, physical findings at examination, and microscopy. These limitations, and the similarities between malaria and babesiosis, are sufficient to explain why this patient's babesiosis was initially misdiagnosed as malaria. Because of this misdiagnosis, the patient was treated for malaria 6 times over 8 months. An accurate diagnosis and appropriate treatment for babesiosis was necessary to end this sequence of mistakes. Increased awareness of the possibility of babesiosis, together with appropriate diagnosis, may result in the discovery of more cases of babesiosis in malaria-endemic areas.

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Investigation of a cluster of pediatric pulmonary tuberculosis cases in Gilgit-Baltistan (GB) Pakistan 2019

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Background: On 27th January 2019, a hospital in Chilass city reported 20 suspected pediatric cases of pulmonary tuberculosis. Provincial TB control Program conducted an investigation to identify associated risk factors and recommend measures to prevent future control

Methods and materials: A cases control study was conducted between Jan-May, 2019. A case was defined as any child who is resident of district Diamer presented with fever and cough for more