

Case Study proposal

When nature strikes! An unusual parasitic infection in a child from New Orleans, LA

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1. Components of the One Health Framework to be addressed with the above case study:
 - The role and mechanisms of cross-species infection in the emergence of new diseases
 - Long standing and re-emergent diseases
 - The impact of natural environmental exposures, including air, food and water, on human health and disease transmission
 - Habitat alterations and other long-term ecosystem changes and their impact on human health

2. Student audiences that could benefit from our case study:

- Public Health, Medicine and Veterinary Medicine

3. Synopsis:

A four-year-old boy is admitted to a hospital with a history of sudden onset of headache, right arm pain and emesis. He has sickle cell disease and so receives an extensive medical evaluation. The boy has not travelled outside the US. He has an unremarkable pathogen exposure history, including no pets at home and no history of raw seafood consumption. However, the family acknowledges that the home is infested with rodents. The child's symptoms worsen and on day 5 the patient is diagnosed with eosinophilic meningitis, suggestive of parasitic infection. Public Health officials and School of Veterinary Medicine faculty are consulted to identify a potential causative agent for this yet unconfirmed infection. On day 12 serological test results are positive for *Baylisascaris procyonis*, the raccoon roundworm. Despite an unusual full recovery from the eosinophilic meningitis, the interdisciplinary team consisting of physicians, veterinarians and infectious disease epidemiologists, is faced with a wide range of questions and concerns from the City Health Department and the media. The Mayor of New Orleans requests a public hearing to address the concerns of his constituents and tasks the team to develop a feasible and sustainable plan to control and prevent the spread of this potentially deadly parasite in New Orleans. Students from the different disciplines will assume their respective roles and work together to develop a control plan. The case study is based on the first confirmed case of *Baylisascaris procyonis* meningitis in Louisiana.