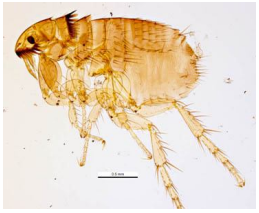
VECTOR-BORNE DISEASES—Dr. Patrick Craig

Vector-Borne Diseases (VBDs) are conditions that depend mainly or entirely upon a vector such as an insect for transmission of a pathogen (disease-causing agent) from one host to another. Vectors may be mechanical, simply carrying the agent on their bodies (e.g the housefly spreading bacteria) or biological in which the agent invades and undergoes development in their bodies. Some of the common biological vectors include ticks, fleas, biting flies, mosquitos and midges. Of these, mosquitos and ticks account for the majority of transmissions of the most important VBDs.

Vectors make a vast difference in disease transmission, because they exponentially increase the range and transmissibility of pathogens over those that would depend on transmission by direct contact. The vectors themselves do not generally get sick from carrying their various infectious agents, but they might accrue some degree of damage to their tissues and this damage could potentially make them more likely to transmit and infect a host; e.g. a mosquito with problems in the feeding apparatus will need to take additional bites to complete a blood meal or a flea with a gut clogged with plague bacteria will regurgitate more.



The VBDs represent a varied and complex group which includes anaplasmosis, ehrlichiosis and babesiosis, ("tick fevers"), bartonellosis, boreliosis (Lyme disease), dirofilariasis (heart worm), leishmaniasis, and rickettsiosis dengue fever, yellow fever and Chikungunya to name a few with new syndromes being uncovered every year. Many of these diseases can cause serious, life-threatening illnesses in animals with many capable of infecting humans.

Such diseases are termed vector-borne zoonotic diseases (VBZD). Some VBZD that are of major importance are tick-borne Lyme disease, flea-borne plague, and mosquito-borne West Nile virus.

Veterinarians have a major role to play in the prevention and control of all VBD's and have a responsibility to maintain a working knowledge of these diseases. Vets should stay abreast with the

latest research, educate and engage their clients in prevention and treatment and alert the public health authorities where appropriate. It is important to note that prevention is the best approach and understand that treatment may not be the end of the story, for in some cases, treated animals could still remain in a “carrier state” becoming “Trojan horse” reservoirs for other animals in the vicinity.

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