

What will the disease issues of the future be?

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Abstract: The major categories of diseases of the future involving wildlife are zoonotic diseases of public health importance, domestic animal diseases of economic importance, and wildlife diseases and health of wildlife importance. The existing patterns of these diseases include exotic, introduced diseases (West Nile virus - WNV), emerging diseases (Lyme disease), re-emerging diseases (animal rabies), and continuing diseases (leptospirosis). Some significant emerging public health diseases are WNV, hantavirus, Lyme disease, hemorrhagic E. coli 0157:H7, and antibiotic resistant bacteria. Emerging domestic animal diseases also include WNV, E. coli 0157:H7, salmonella enterica, and spongiform encephalopathies. Whereas, emerging wildlife diseases are WNV, particularly in Corvidae, avian vacuolar myelinopathy in bald eagles and American coots, animal rabies in raccoons, bovine tuberculosis (TB) in Michigan mammals, and ranaviruses and Chytrid fungi in amphibians. Recent outbreaks of major zoonotic diseases like Rift Valley Fever in the Saudi Arabian peninsula and Ebola virus in Sudan alert us to the dangers of rapid global movement of diseases. The most dramatic recent disease event that fits all of the categories was the introduction of WNV into New York City in 1999 and its survival and expansion in 2000 to 12 states resulting in about 80 human cases and 8 deaths, tens of thousands of bird deaths, and the involvement of more than 60 species of birds and 8 species of mammals, including equines. This unique invasion and expansion of a new disease stimulated the establishment of a massive, multistate surveillance network utilizing dead birds as sentinels for detecting the presence of the virus. The surveillance effort involved the collaboration of federal and state public health, animal health, wildlife health, and wildlife agencies. The distribution of WNV will continue to expand within the continent in the future and will require expanded resources from combined state and federal agencies. Prevention and control of this emerging bird-borne disease, rodent-borne diseases of Lyme disease and hantavirus, carnivore diseases such as raccoon rabies, and bovine TB in deer will need the creative efforts and perseverance of many wildlife biologists to be successful.

Key words: Public health, wildlife disease, zoonotic diseases