Animal Vaccines in a One Health World – An Overview of Veterinary Biologics

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This presentation will provide an overview of the world of animal health vaccines and touch upon areas of overlap and mutual need with human health. Vaccines are a mainstay of disease prevention in both humans and animals. Indeed, the eradication of smallpox and rinderpest, a disease of hoofstock from which measles likely derived, can both largely be attributed to vaccines. These diseases of course represent the only infectious diseases ever eradicated from the earth. Veterinarians utilize a wide range of vaccines, or “biologics”, protecting species ranging from dogs and cats to swine, cattle, small ruminants, poultry, fish, and wildlife. Platforms and types of vaccines include killed, modified live, autogenous, recombinant, and others, with administration routes spanning injection, intranasal, transdermal, water-bath (fish), and oral. Notably, the world’s first (and only?) approved DNA vaccine was developed for use in salmon, reflecting capabilities within the veterinary realm that could potentially be applied to address human needs. Other such examples are found with Lyme disease, for which there are multiple highly effective vaccines available for dogs, and West Nile Virus, for which there are equine vaccines. Medical practitioners on the human side will recognize, but may be surprised by, the larger companies involved with animal health, as the list has included Merck, Boehringer Ingelheim, Pfizer (animal health division recently spun off into “Zoetis”), Eli Lilly (animal health division is “Elanco”), Sanofi-Aventis, Novartis, Wyeth, Schering-Plough, Mallinkrodt, and others.

Biography

Dr. Tischendorf holds a BS degree in Zoology from Ohio University and a Doctor of Veterinary Medicine and Biomedical Sciences (DVM) degree from Colorado State University. He serves as a regional veterinarian with Merck and is based in the Houston area. His special interests include emerging and zoonotic disease, anesthesiology, dermatology, and animal cruelty forensics and investigations. Prior to becoming a DVM he worked as an endangered species biologist and wildland firefighter. In his free time he trains natural resource professionals on wildlife tracking and immobilization. He is a former Marine and has lived in roughly 15 states over the course of his career.

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