

Crossing the Species Barrier – Using One Health to Study Cancer

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One Health Medicine, which the CDC defines as “a collaborative, multisectoral and transdisciplinary approach...with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment,” focuses predominantly on zoonotic diseases, but can be expanded beyond infectious disease to the study of neoplasia. While there is a general acceptance of laboratory animals (mice, rats, primates) to gain a better understanding of the pathogenesis of neoplasia, studies involving naturally occurring and treated neoplasia in other species may lead to a better and more realistic understanding of how neoplasia occurs and how it responds to treatments. For example by looking at neoplasia in domestic species such as canine osteosarcoma have found that the development of osteosarcoma are different in humans and canines but that research into developing safe therapies that disrupt the neoplasm are valuable to both. To further research such as has been done in canines, the Exotic Species Cancer Research Alliance (ESCRA) is enhancing the study of comparative oncology by evaluating neoplasia across species to determine prevalence, type, treatments and survival of these animals with neoplasia. Many of these animal species, such as elephants, live longer lifespans and live in similar environments as humans. Through these new evaluations we hope to find not only a better natural animal models, but to also gain improved understanding of how these cancers behave and what therapies are successful.