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## The Wildlife Biologist in Public Health: Functions and Responsibilities at State Level

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Veterinary programs have become well established in many state health departments during the past two or three decades. During this period we have seen brucellosis and tuberculosis in domestic livestock controlled to the point where they are no longer a great threat to public health. Rabies in domestic animals likewise no longer threatens human health as it did 30 years ago. While diseases of domestic animals transmissible to man are still of great importance and their surveillance continues to occupy much of the public health veterinarian's time, he is aware that many diseases have a wide host range. When considering the eradication or control of domestic animal diseases communicable to man the possibility of the causative agents occurring in wildlife must not be overlooked. This is one aspect of disease transmission which if ignored may jeopardize an entire control program. Surveillance and a thorough knowledge of wild animal activities and population dynamics as related to disease transmission patterns.

Even though a few state health agencies have employed wildlife biologists for the application of ecological survey methods in the research, surveillance and control of selected zoonoses, most states have not found a way to incorporate the services of field biologists in their public health organizational structure. Still, the wildlife disease research conducted by other agencies and institutions continues to emphasize the need to approach health from a broader ecological viewpoint. The public is demanding that state and local governments show leadership in solving the problems and rectifying the conditions which affect the quality of the environment. If state health programs fail to provide some form of surveillance and control of diseases of wildlife transmissible to man, it is doubtful that anyone else is going to assume complete responsibility in this area. Wildlife diseases affecting human health should be an important consideration of every state veterinary public health program.

Recruiting a biologist with academic training in the ecology of diseases and one inclined toward public health is often difficult. Field biologists are academically prepared to conduct habitat surveys, estimate populations and collect and identify different types of wildlife but are not usually specifically trained on epidemiologic investigation procedures. The challenge of zoonoses research has fortunately, however, prompted more wildlife biologists and vertebrate ecologists to pursue advanced training with major emphasis in related fields such as bacteriology, virology, mycology and epizootiology.

The duties and responsibilities of the wildlife biologist assigned to a newly established public health position must be delineated as the particular program develops. After an initial period of orientation and extensive training under direction of an experienced health program staff, the biologist should be able to function effectively as a professional without tight supervision. In order to provide a basis for any surveillance and control of wildlife diseases the biologist must acquire baseline information through studies of the various disease agents and wild animal species involved. Much information may be acquired through interdisciplinary epidemiological investigations and surveys by health department personnel. However, the design and planning of complex ecological investigations may necessitate cooperation with universities, National Communicable Disease Center, or other state and federal disease research centers. The types of investigations and research projects inevitably vary with the infectious agent involved, extent of its activity and nature of the community concerned. The ultimate objective should be to delineate, insofar as possible, the conditions which enhance the survival, maintenance and probability of circulation of diseases among humans with a view to developing and evaluating various preventive actions.

In Florida, arbovirus surveillance projects are designed to provide adequate information regarding the activity of Eastern, Western, Venezuelan and St. Louis encephalitis viruses in the biological environment. These studies continue throughout the year. Between May and October emphasis is upon the surveillance of metropolitan areas having a large population at risk. Special investigations are conducted whenever it appears there may be current virus circulation in any area of the state. In addition, rabies epizootics in raccoons, bats and foxes are also monitored throughout the year and any exceptional increase in the number of reported cases is carefully investigated and documented. Ongoing raccoon rabies research projects are conducted with cooperation of the rabies ecology unit of the National Communicable Disease Center. Epidemiologic investigations of other zoonoses such as leptospirosis, encephalomyocarditis, histoplasmosis, and salmonellosis have been conducted both independently and in cooperation with various units of the National Communicable Disease Center, State Department of Agriculture Animal Disease Diagnostic Laboratory, and private veterinarians.

Health department staffs are largely cccupied with diseases affecting human health, and conservation and game commission personnel view wildlife diseases and parasites as limiting factors in various game and furbearing animals, birds, and fish populations. In effect, everyone has "been doing his own thing" and even though advances are made independently there is often a lack of communication when problems of common interest arise. We sometimes accuse other state agencies and private organizations of inaction as far as public health programs are concerned. If health agencies establish partnership arrangements with the game commissions and others who are involved in the complexities of wildlife diseases, we can begin to appreciate each other's problems. Effective liaison could be established through a public health wildlife biologist.

Wildlife diseases which affect human health may seriously reduce populations of certain important species of wildlife. On the other hand, some disease agents, while relatively unimportant as limiting factors in wildlife populations, are very important to human moribidity and mortality. Disease research, surveillance and control programs can easily be advantageous to both wildlife and health agencies.

The biologist should also participate in development of regulatory legislation aimed at prevention and control of important zoonoses whenever appropriate. Our somewhat affluent society today no longer appears completely satisified with dogs and cats as pets. They now relish the status accorded to exotic and native wildlife species. The relatively unrestricted interstate movement of wildlife pets as well as wild animals used by sporting groups to train dogs aid in transmitting diseases from one part of the country to anether. If we cannot curtail this movement through legislation and regulation, we should consider instituting limited local control measures whenever possible. Once the biologist gains experience and develops an understanding of public health problems at a local level he can provide valuable consultant services on many aspects of wildlife diseases that affect human health. While we all support good conservation practices it is frequently necessary to conduct a campaign to inform the public about the difference between conservation and preservation because many individuals do not understand the difference. In Florida, raccoon populations have been protected in some residential areas and allowed to increase to the point where they maintain rabies epizootics. Whenever this occurs we have to face the danger of the agent spilling over into domestic species and humans. Efforts to reduce the population of a particular species invariably causes considerable excitement, with some preservationists condemning such practice on the grounds that it upsets the balance of nature. The wildlife biologist is needed to intelligently discuss disease as a reflection of a current ecological imbalance. He definitely lends added authority to public health wildlife disease control programs.

The wildlife biologist working in veterinary public health usually must build his specialty program within the framework of existing activities. There is little to draw upon in the way of specifics. A disease relatively unimportant as a wildlife decimator may be a great threat to public health; therefore, the biologist must delve into various disease conditions and design his own projects.

In Florida, we feel very keenly about surveillance and control of diseases in wildlife. Arbovirus epidemics and rabies epizootics have had a traumatic effect upon residents and tourists alike. On a year-round basis families camp, fish, swim, boat and hike in our state and federal recreation areas. We would like to insure that they do not contract a disease of any kind from wildlife. We realize the intrinsic value of our wild faunas and want to live in peaceful coexistence with them but not to the extent that they may be a serious threat to public health.

State health departments ordinarily cannot turn to personnel of other agencies who are concerned with wildlife diseases and expect to find all the answers. They can develop excellent programs of their own with assistance from a wildlife biologist.