

Public Veterinary Medicine: Public Health

Compendium of Animal Rabies Prevention and Control, 2004

Rabies is a fatal viral zoonosis and a serious public health problem.¹ The purpose of this Compendium is to provide information to veterinarians, public health officials, and others concerned with rabies prevention and control. These recommendations serve as the basis for animal rabies-control programs throughout the United States and facilitate standardization of procedures among jurisdictions, thereby contributing to an effective national rabies-control program. This document is reviewed annually and revised as necessary. Parenteral vaccination procedure recommendations are contained in Part I; Part II details the principles of rabies control; all animal rabies vaccines licensed by the USDA and marketed in the United States are listed in Part III.

Part I: Recommendations for Parenteral Vaccination Procedures

- A) **VACCINE ADMINISTRATION:** All animal rabies vaccines should be restricted to use by, or under the direct supervision of, a veterinarian,² except as recommended in Part II.B.1. All vaccines must be administered in accordance with the specifications of the product label or package insert.
- B) **VACCINE SELECTION:** Part III lists all vaccines licensed by USDA and marketed in the United States at the time of publication. New vaccine approvals or changes in label specifications made subsequent to publication should be considered as part of this list. Any of the listed vaccines can be used for revaccination, even if the product is not

the same brand as previously administered vaccines. Vaccines used in state and local rabies control programs should have a 3-year duration of immunity. This constitutes the most effective method of increasing the proportion of immunized dogs and cats in any population.³ There are no laboratory or epidemiologic data to support the annual or biennial administration of 3-year vaccines following the initial series.

- C) **ADVERSE EVENTS:** Currently, there is no epidemiologic association between a particular licensed vaccine product and adverse events including vaccine failure.^{4,5} Adverse events should be reported to the vaccine manufacturer and the USDA, Animal and Plant Health Inspection Service, Center for Veterinary Biologics (www.aphis.usda.gov/vs/cvb/ic/adverseeventreport.htm), by telephone at (800) 752-6255, or by e-mail to CVB@usda.gov).
- D) **WILDLIFE AND HYBRID ANIMAL VACCINATION:** The efficacy of parenteral rabies vaccination of wildlife and hybrids (the offspring of wild animals crossbred to domestic animals) has not been established, and no such vaccine is licensed for these animals. Zoos or research institutions may establish vaccination programs, which attempt to protect valuable animals, but these should not replace appropriate public health activities that protect humans.
- E) **ACCIDENTAL HUMAN EXPOSURE TO VACCINE:** Human exposure to parenteral animal rabies vaccines listed in Part III does not constitute a risk for rabies infection. However, human exposure to vaccinia-vectored oral rabies vaccines should be reported to state health officials.⁶
- F) **RABIES CERTIFICATE:** All agencies and veterinarians should use the National Association of State Public Health Veterinarians (NASPHV) Form #51, "Rabies Vaccination Certificate," which can be obtained from vaccine manufacturers. The form must be fully completed and signed by the administering or supervising veterinarian. This form can also be found on the CDC Web site (www.cdc.gov/ncidod/dvrd/rabies/professional/professi.htm). Computer-generated forms containing the same information are acceptable.

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Endorsed by the American Veterinary Medical Association (AVMA), CDC, CSTE, and National Animal Control Association (NACA).

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Part II: Rabies Control

A) PRINCIPLES OF RABIES CONTROL

- 1) **RABIES EXPOSURE:** Rabies is transmitted only when the virus is introduced into bite wounds, open cuts in skin, or onto mucous membranes.⁷
- 2) **HUMAN RABIES PREVENTION:** Rabies in humans can be prevented either by eliminating exposures to rabid animals or providing exposed persons with prompt local treatment of wounds combined with the administration of human rabies immune globulin and vaccine. The rationale for recommending preexposure and postexposure rabies prophylaxis and details of their administration can be found in the current recommendations of the Advisory Committee on Immunization Practices (ACIP).⁷ These recommendations, along with information concerning the current local and regional status of animal rabies and the availability of human rabies biologics, are available from state health departments.
- 3) **DOMESTIC ANIMALS:** Local governments should initiate and maintain effective programs to ensure vaccination of all dogs, cats, and ferrets and to remove strays and unwanted animals. Such procedures in the United States have reduced laboratory-confirmed cases of rabies in dogs from 6,949 in 1947 to 99 in 2002.⁸ Because more rabies cases are reported annually involving cats (299 in 2002) than dogs, vaccination of cats should be required. Animal shelters and animal control authorities should establish policies to ensure that adopted animals are vaccinated against rabies. The recommended vaccination procedures and the licensed animal vaccines are specified in Parts I and III of the Compendium.
- 4) **RABIES IN VACCINATED ANIMALS:** Rabies is rare in vaccinated animals. If such an event is suspected, it should be reported to state public health officials, the vaccine manufacturer, and the USDA, Animal and Plant Health Inspection Service, Center for Veterinary Biologics. The laboratory diagnosis should be confirmed and the virus characterized by a rabies reference laboratory. A thorough epidemiologic investigation should be conducted.
- 5) **RABIES IN WILDLIFE:** The control of rabies among wildlife reservoirs is difficult.⁹ Vaccination of free-ranging wildlife or selective population reduction might be useful in some situations, but the success of such procedures depends on the circumstances surrounding each rabies outbreak (See Part C. Control Methods in Wildlife). Because of the risk of rabies in wild animals (especially raccoons, skunks, coyotes, foxes, and bats), the AVMA, NASPHV, and Council of State and Territorial Epidemiologists strongly recommend the enactment of state laws prohibiting their importation, distribution, and relocation.
- 6) **RABIES SURVEILLANCE:** Laboratory-based rabies surveillance is an essential component of

rabies control and prevention programs. Accurate and timely information is necessary to guide human postexposure prophylaxis decisions, determine the management of potentially exposed animals, aid in emerging pathogen discovery, describe the epidemiology of the disease, and assess the need for and effectiveness of oral vaccination programs for wildlife.

- 7) **RABIES DIAGNOSIS:** Rabies testing should be done by a qualified laboratory designated by the local or state health department¹⁰ in accordance with the established national standardized protocol for rabies testing (www.cdc.gov/ncidod/dvrd/rabies/Professional/publications/DFA_diagnosis/DFA_protocol-b.htm). Euthanasia¹¹ should be accomplished in such a way as to maintain the integrity of the brain so that the laboratory can recognize the anatomical parts. Except in the case of very small animals such as bats, only the head or brain (including brain stem) should be submitted to the laboratory. Any animal or animal part being submitted for testing should be kept under refrigeration (not frozen or chemically fixed) during storage and shipping.
- 8) **RABIES SEROLOGY:** Some "rabies-free" jurisdictions may require evidence of vaccination and rabies antibodies for importation purposes. Rabies antibody titers are indicative of an animal's response to vaccine or infection; titers are not indicators of protection. Other immunologic factors also play a role in preventing rabies, and our abilities to measure and interpret those other factors are not well developed. Therefore, evidence of circulating rabies virus antibodies should not be used as a substitute for current vaccination in managing rabies exposures or determining the need for booster vaccinations.¹²

B) CONTROL METHODS IN DOMESTIC AND CONFINED ANIMALS

- 1) **PREEXPOSURE VACCINATION AND MANAGEMENT:** Parenteral animal rabies vaccines should be administered only by, or under the direct supervision of, a veterinarian. Rabies vaccinations may also be administered under the supervision of a veterinarian to animals held in animal control shelters prior to release. Any veterinarian signing a rabies certificate should assure that the person administering vaccine is identified on the certificate and is appropriately trained in vaccine storage, handling, administration, management of adverse events, etc. This practice ensures that a qualified and responsible person can be held accountable to assure the animal has been properly vaccinated.

Within 28 days after primary vaccination, a peak rabies antibody titer is reached and the animal can be considered immunized. An animal is currently vaccinated and considered immunized if the primary vaccination was administered at least 28 days previously and