

## Direct from CDC's Environmental Health Services Branch

Hugh Mainzer,  
M.S, D.V.M., Dipl. ACVPM



# Veterinarians and Environmental Health Practitioners: Partners in Prevention

*Editor's note: NEHA strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we will feature a column from the Environmental Health Services Branch (EHSB) of the Centers for Disease Control and Prevention (CDC) in every issue of the Journal.*

*EHSB's objective is to strengthen the role of state, local, and national environmental health programs and professionals to anticipate, identify, and respond to adverse environmental exposures and the consequences of these exposures for human health. The services being developed through EHSB include access to topical, relevant, and scientific information; consultation; and assistance to environmental health specialists, sanitarians, and environmental health professionals and practitioners.*

*EHSB appreciates NEHA's invitation to provide monthly columns for the Journal. EHSB staff will be highlighting a variety of concerns, opportunities, challenges, and successes that we all share in environmental public health.*

**E**vents such as urbanization, globalization, and terrorism have brought the need for a stronger, larger, more diverse, and more competent public health workforce to the forefront of public planning (Pappaioanou, 2004). A growing number of medical issues are resulting from increasing human-wildlife contact, environmental changes, expansion of international travel, antimicrobial misuse, intensification and integration of food production, and growth of the immunocompromised population (World Health Organization, 1999).

Veterinarians have training that gives them a unique capacity to address public health issues and to help meet public health needs. On completion of their clinical training, veterinarians take an oath that states: "I solemnly swear to use my scientific knowledge and skills for the benefit of society through ... the promotion of public health and the advancement of medical knowledge" (American Veterinary Medical Association, 1999, emphasis added). Although veterinary medicine and environmental public health have long had many common competencies, practices, and accomplishments in common, it may be useful to reintroduce this important emerging professional partnership.

### **What Is Veterinary Medicine?**

Veterinary medicine is "real medicine." Schooling consists of a rigorous four-year postbaccalaureate program of medical and surgical training. After successfully passing a national examination, veterinarians in the United States can

become licensed to practice on all but human animal species in any U.S. state or territory. Veterinarians are among the few clinicians whose success requires both a solid understanding of the importance of diagnosing and treating the "whole" animal and a thorough application of herd/population health principles and preventive medicine. Like their physician colleagues, many veterinarians also complete an internship/residency or advanced training that leads to board certification in one or more of the 20 veterinary specialties. Of note to the environmental health practice community, one such specialty organization may be of particular interest for the environmental health practice community: The American College of Veterinary Preventive Medicine requires demonstrated proficiency in the public health domains of epidemiology and biostatistics, food safety, infectious and parasitic diseases, environmental health and toxicology, and public administration and health education. A recent World Health Organization (WHO) technical report defined veterinary public health as "the sum of all contributions to the physical, mental, and social well-being of humans through an understanding and application of veterinary science" (WHO Study Group on Future Trends in Veterinary Public Health, p. 4, 2002). This definition establishes the context—protection and improvement of human health—in which veterinarians make their contribution. It also describes how those who learn and apply the scientific principles of veterinary medicine are part of a core public health practice activity with global impact. There is an explicit understanding that "veterinary public health

activities must be carried out in close partnership with other public health efforts to ensure positive health outcomes" (WHO Study Group on Future Trends in Veterinary Public Health, p. 4, 2002).

### **Veterinarians in the Contemporary Practice of Public Health**

Today, veterinarians serve many public health roles. Although veterinarians are estimated to make up less than 1 percent of the public health workforce (Gebbie, 2000), recent educational and policy influences have renewed the interest in increasing the numbers of veterinary professionals in public health. Examples of such professionals and their functions can be found in the sidebar on this page.

Because veterinarians work at the interface of human, animal, and environmental health, they are uniquely positioned to view health through the lens of public health impact. Changes in land use, creation and operation of large terrestrial and marine food production units, and microbial and chemical pollution of land and water sources have created new threats to the health of both animals and humans (Zinsstag, Schelling, Wyss, & Mahamat, 2005). The intensive responses to the intentional release of anthrax, the periodic contamination of seafood production beds, the spread of West Nile virus, the importation of monkeypox, the widely publicized occurrence of large foodborne-disease outbreaks, and the threat of pandemic influenza all serve as recent models illustrating the impact and burden of disease on the resources of public health infrastructure (Kahn, 2006; King, 2006). The need for integrated animal and human health surveillance, diagnostic laboratory systems, and delivery of effective health interventions among animal, human, and public health professions has never been more essential.

Veterinarians are turning to environmental health scientists and practitioners to develop their understanding that many outbreaks and public health emergencies are failures of veterinary prevention infrastructure. It has been demonstrated that the professions can work together to investigate the environmental antecedents that lead to adverse health outcomes (Cassady et al., 2006). By strengthening epidemiologic and laboratory investigations that assess the role of environmental influences, this partnership can help to develop and apply sustainable and effective community health interventions. With their understanding of biological in-

teractions and clinical experience—as well as their roots in preventive medicine—veterinarians are ideal environmental health service partners.

As the veterinary profession broadens the perception of what a veterinarian can do, the term "one world—one medicine" may signify the acceptance that veterinary medicine is also a human health activity. Together with their partners in health protection and promotion, veterinarians can improve public health practice with a renewed focus on the complex interactions that affect environmental, animal, and human health. 🐾

**Corresponding Author:** Hugh Mainzer, Captain, Chief Veterinary Officer (select), U.S. Public Health Service, Supervisory Preventive Medicine Officer/Epidemiologist, Division of Emergency and Environmental Health Services, National Center for Environmental Health, CDC, 4770 Buford Highway, MS F-28, Atlanta, GA 30341. E-mail: hugh.mainzer@cdc.hhs.gov. Web site: www.cdc.gov/nceh/ehs.

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### **Veterinarians in the Contemporary Practice of Public Health: Some Clinical, Scientific, and Administrative Functions**

- Public health policy makers
- Public health or environmental health program managers and executives
- Epidemiologists
- Community practitioners
- Local, state, federal, or international health officers
- Public health laboratory scientists
- Public health educators and communications experts
- Animal control consultants and shelter medicine practitioners
- Occupational safety and health advisors
- Teachers of public health sciences and preventive medicine
- Subject matter experts on zoonosis, vectorborne-disease, and even non-infectious-disease prevention and control programs

### **Some Typical Activities**

- Environmental risk assessment and study of health hazard effects
- Ecologic and environmental health sciences
- Disease surveillance
- Conservation medicine practice
- Quarantine services and select agent oversight
- Food and water safety
- Biomedical research
- Drug and medical device quality/safety assurance
- Agricultural program, nutritional guideline, and sustainable community development consultation
- Food animal disease control activities
- Global health improvement programs (including malaria control and HIV/AIDS prevention)
- Biologic, chemical, and radiologic terrorism preparedness, prevention, and response
- Natural/technologic disaster and pandemic preparedness, prevention, and response

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