

# Commentary

## Public health roles for small animal practitioners

James S. Wohl, DVM, MPA, and Kenneth E. Nusbaum, DVM, PhD

The terrorist attacks of September 11, 2001, and the anthrax scares later that fall heralded a new era of public health concerns in the United States. Bioterrorism (the deliberate release of viruses, bacteria, or other agents used to cause illness or death in people, animals, or plants) and agroterrorism (intentional attack on agriculture infrastructures with biological agents) are recognized as terror threats equal to traditional weaponry. The post-9/11 era of public health magnifies the role that all health professions play in protecting citizens by preventing or controlling intentional health threats.

The veterinary medical profession has been involved in the protection of public health since the late 19th century. In recent years, the veterinary profession has changed toward a greater number of small animal (canine and feline) veterinarians and diminishing numbers of veterinarians practicing in fields traditionally associated with public health responsibilities, such as food animal, agricultural, regulatory, and public health practice. The focus of veterinary manpower on the small animal pet population has been a response to the increasing value US residents place on their pets and the desire that pet owners have for advanced veterinary health care. The importance of pets in society is evident by the increasing economic impact of pet food manufacturing and sales and the response to recent natural disasters such as Hurricanes Katrina and Rita. Many residents refused to evacuate the affected areas without their pets. In the weeks following landfall, public outcry for the care of pets in Katrina-affected areas and fundraising in excess of \$43 million<sup>a</sup> rivaled concern for human victims.

Policies that expand the public health role of small animal veterinarians can address the current and anticipated scarcity of public health veterinary services during this time of increased threat to animal, agricultural, and human well-being. In cultivating the small animal veterinary dimension of public health, the veterinary profession will position itself in a manner that more accurately reflects the integration of animal and human health in 21st-century America.

### Historical Background of Veterinary Medicine in Public Health

The World Health Organization defines veterinary public health as the sum of all contributions to

From the Departments of Clinical Sciences (Wohl) and Pathobiology (Nusbaum), College of Veterinary Medicine, Auburn University, Auburn, AL 36849.

Address correspondence to Dr. Wohl.

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#### ABBREVIATIONS

DHS	Department of Homeland Security
APHIS	Animal and Plant Health Inspection Service
VMAT	Veterinary Medical Assistance Team
FEMA	Federal Emergency Management Agency
NAP	National Academies of Practice
NAS	National Academies of Science
IOM	Institute of Medicine

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the complete physical, mental, and social well-being of humans through an understanding and application of veterinary science.<sup>1</sup> Veterinarians protect human health by preventing and controlling infectious diseases, ensuring the safety of the nation's food supply, and providing health care for animals. Traditionally, public health activities of veterinarians have focused on zoonotic diseases, food and water quality, environmental protection, biomedical research, health education, disaster and emergency response, laboratory animal medicine, development of biologic products and medical devices, and the management of animal populations. The Veterinarian's Oath, recited by every graduating veterinarian, lists the promotion of the public health as a core professional function.

Noah et al<sup>2</sup> identified eradication of the following serious animal diseases of public health concern as achievements for the veterinary profession during the 20th century: contagious pleuropneumonia (eradicated in 1892), fowl plague (1929), foot-and-mouth disease (1929), glanders (1934), dourine (1942), cattle tick fever (1943), vesicular exanthema of swine (1959), screwworm myiasis (1959), sheep scabies (1973), exotic Newcastle disease (1974), and swine fever (hog cholera; 1978). In addition to eradication of animal diseases, the profession contributed to advancements in laboratory animal science, control of infectious disease, optimization of livestock herd health and production, food safety, recognition and enhancement of the human-animal bond, border inspection and surveillance, and the practice of surgery and medicine. Additional highlights include the establishment of the United States Veterinary Corps within the armed forces and the integration of the veterinary profession with human public health practitioners. Since 1916, veterinarians in the US Army, Air Force, Surgeon General's Office, and Public Health Service have contributed to occupational health, food safety, medical research, and health surveillance of deployed personnel.<sup>2</sup>

## **Government Agencies Interfacing with Veterinarians in Public Health**

The most important federal agencies involved in veterinary public health are the USDA, the Department of Health and Human Services, and the DHS. The USDA APHIS is responsible for protecting and promoting US agricultural health, administering the Animal Welfare Act, and conducting wildlife damage management activities. Within APHIS (Appendix), the veterinary services office operates national centers involved in preventing, controlling, or eliminating animal diseases and monitoring and promoting animal health and productivity. The USDA APHIS also administers the National Veterinary Accreditation Program. This voluntary program certifies private veterinary practitioners to work cooperatively with federal veterinarians and state animal health officials to prevent exported animals from introducing diseases into another state or country. Currently, there are over 60,000 active accredited veterinarians in the national database.<sup>3</sup> Other USDA agencies involved in animal health include the Agricultural Research Service; the Food Safety Inspection Service; and the Cooperative State Research, Education, and Extension Service.

The Department of Health and Human Services administers the National Disaster Medical System, a cooperative asset-sharing program that augments local medical care when an emergency exceeds the scope of a community's hospital and health care resources. The emergency resources come from federal, state, and local governments; the private sector; and civilian volunteers. The VMATs include clinical veterinarians, pathologists, veterinary technicians, microbiologists, and others who assist animal disaster victims and provide care to search-and-rescue dogs. The VMATs are organized and trained through the AVMA and are available to the National Disaster Medical System when emergency veterinary services are requested by state emergency management or public health agencies.

Other Department of Health and Human Services agencies impacting veterinary public health include the CDC and the FDA. The National Center for Infectious Disease of the CDC works in partnership with local and state public health officials, other federal agencies, medical and public health professional associations, infectious disease experts from academic and clinical practice, and international and public service organizations. Veterinary involvement includes reporting occurrences of reportable infectious diseases and assisting epidemiologic investigations of emerging and reportable diseases. The Center of Veterinary Medicine is a branch of the FDA involved in regulating the manufacture and distribution of food additives and drugs that will be given to animals that may reach the human food supply.

The DHS agencies that have interacted with the veterinary profession include Customs and Border Protection and FEMA. Customs and Border Protection primarily works with APHIS veterinary medical officers in the inspection of animals crossing US borders. The FEMA administered the National Disaster Medical System following September 11, 2001, until the system was returned to the Department of Health and Human Services on January 1, 2006.

State veterinarians have the pivotal role of linking federal agencies with regional veterinary medical organizations. Each state has a state veterinarian position usually in a public health department or epidemiology service within the state's department of health. State veterinarians provide consultation to physicians, veterinarians, and other health authorities in zoonotic disease control and treatment procedures for humans and animals; conduct epidemiologic investigation into human disease of animal origin; and formulate and interpret regulations for the administration and enforcement of laws pertaining to such diseases. State veterinarians cooperate with state and federal departments of agriculture, veterinarians, professional organizations, livestock and agriculture organizations, and public groups in the administration of laws and regulations pertaining to the prevention of disease of public health importance. They also serve as expert consultants on veterinary services to local veterinarians, physicians, public health authorities, and government officials during disasters and disease outbreaks.

## **Traditional Roles of Small Animal Veterinarians in Public Health**

The public health activities of small animal veterinary practitioners are typically embedded in the day-to-day operations of small animal care and client service rather than a set of practices specifically designed to advance public health. Despite the emphasis on individual client service and patient management, small animal veterinarians have traditionally performed important roles in protecting human health. Rabies virus vaccination protocols are the most well-known example of the role of small animal veterinarians in prevention and control of zoonotic disease. Veterinarians are required by state regulation to record administration of all rabies virus vaccines, submit samples from animals suspected to have rabies for testing, and educate clients on the legal ramifications of owning an unvaccinated dog or cat. In the United States, rabies virus vaccination protocols have virtually eliminated transmission of the rabies virus from domestic carnivores to humans.<sup>4</sup> Other zoonoses controlled and prevented by practices of small animal veterinarians include infection with intestinal parasites; ringworm organisms; and enteric bacteria such as *Salmonella* spp, *Campylobacter* spp, and *Escherichia coli*. Small animal veterinarians also educate clients and veterinary staff regarding potential zoonotic diseases such as leptospirosis, borreliosis, Rocky Mountain Spotted Fever, ehrlichiosis, and ectoparasitism.

Small animal veterinarians have also assumed the role of educators in prevention of dog and cat bites and scratches; the risks of emerging diseases, such as West Nile virus infection and avian influenza for pets and pet owners; and the risks of animal contact for immunocompromised people. Given that dogs and cats are the most common species associated with the human-animal bond, small animal veterinarians have been active in facilitating the use of guide and assistance dogs for people with disabilities and promoting the benefits of animal contact for elderly and confined people. Acknowledgement of the human-animal bond is also evident in bereavement counseling or referral of

clients bereft at the loss of their pet. Finally, small animal veterinarians practice biosecurity measures when handling controlled substances, animal and biological waste, and medical supplies.

### **Public Health Problems of Homeland Security and Human Health Care**

The dimensions of public health have been broadened in the 21st century by the threat of bioterrorism and climatic events such as was seen with Hurricanes Katrina and Rita. Other features of modernization that stress US public health capacity include increased international travel and relocation, globalization of commerce, technology and industry, microbial adaptation, and human encroachment into wilderness areas.<sup>5</sup> Terrorist threats, in all forms, are clearly an issue of homeland security. Since the 2003 reorganization of federal agencies placed FEMA in the DHS, the health aftermath of natural disasters can also be considered an issue of homeland security.

**Bioterrorism**—Recent concerns about agricultural terrorism have focused largely on foot-and-mouth disease. However, introduction of infectious diseases via dogs and cats can be considered an anticipated threat. Flying airliners into the World Trade Center demonstrated the resourcefulness of terrorist organizations to develop unimaginable delivery systems that target American values. From this perspective and given the emotional value our society places on animals, the introduction of infectious diseases via pets seems worthy of consideration. In addition to dogs and cats, exotic species (reptiles, birds, and fish) are commonly crossing US borders as pets or as imported animals for the US pet market. Although not considered a bioterrorist act, the 2003 monkeypox outbreak in the Midwestern United States originated after imported African rodents infected prairie dogs in pet-distribution facilities.<sup>6</sup> Alternatively, animals may serve as sentinels for animal and human infectious and environmental diseases that are intentionally introduced through other means. In either scenario, small animal and exotic animal veterinarians would likely be the first medically trained personnel to evaluate dogs, cats, turtles, snakes, birds, and small mammals with clinical signs of unusual disease. Although small and exotic animal veterinarians are obligated to notify their state public health veterinarian of potentially reportable diseases, there is no formalized information system designed to educate this segment of the profession regarding naturally emerging or intentionally introduced zoonotic diseases.

**Natural disasters**—The aftermath of Hurricanes Katrina and Rita in 2005 demonstrated that naturally occurring disasters ultimately evolve into public health problems. Emergency care for humans, treatment of affected livestock and companion animals, surveillance and identification of infectious agents, safety of food and water, and counseling and advising of victims were all public health challenges in the months following these hurricanes. In this regard, natural disasters are similar to bioterrorism in that they have a biological dimension.<sup>7</sup> Primary public health responders are usu-

ally physicians, nurses, firefighters, police officers, microbiologists, and emergency personnel. Deployment of VMATs is designed specifically to assist the local veterinary community with care of animals and to provide veterinary oversight and advice concerning animal-related issues and public health.<sup>8</sup> The VMATs are composed of trained veterinary personnel and, once deployed, are responsible to the affected states requesting their assistance through the National Disaster Medical System. All four VMATs were deployed during Hurricane Katrina.

The public health consequences of Hurricanes Katrina and Rita overwhelmed local, state, and federal emergency management systems. In addition to a call for improved intergovernmental cooperation, the need of greater preparedness capacity is evident. The issue of preparedness is even more alarming when considering the real possibility that multiple natural or man-made disasters could occur simultaneously. Even in single-disaster events where public health personnel are deployed from across the nation, a vacuum develops in regions providing supporting personnel. Small animal veterinarians have unique training and skills that are adaptable to the response needs during and after such events and are an untapped source of first-responder capacity. Veterinarians are trained in population health, comparative disease, zoonotic diseases, food and water inspection and safety, hazardous waste control, the processing of biologic samples, and pathology. In addition, small animal veterinary hospitals and their equipment and supplies can provide needed physical infrastructure.<sup>9</sup> Although liability and negligence are issues if veterinarians were to provide direct medical treatment to humans, it has been suggested that during extreme emergency situations, veterinarians could be protected from legal exposure.<sup>10</sup>

**Human health and health care costs**—A third problem area in national public health involves the increasing incidence of childhood and adult obesity and associated chronic diseases such as diabetes, hypertension, heart disease, and kidney disease.<sup>11</sup> Small animal veterinarians commonly treat obesity, hypertension, diabetes, heart disease, and kidney disease in their dog and cat patients. Approximately one third of American households have a dog or cat. Typically, pet owners bring their dog to a veterinarian almost twice a year and have their cats examined once a year.<sup>12</sup> Many Americans have more contact with their veterinarian than with their physicians; therefore, small animal veterinarians have an opportunity to educate the public on preventative health measures applicable to companion animals and people. In addition, physical activity programs could be developed by veterinarians and physicians for dogs and their owners to reinforce healthy activity and support public health initiatives.

### **The Problem of Veterinary Public Health in the 21st Century**

The demography of veterinary practice in the past 25 years has been characterized by an increasing number of small animal practitioners and a reduction in the number of food supply, regulatory, and public health

practitioners. The Bureau of Labor Statistics anticipates 28,000 job openings for veterinarians by 2012 (S 914/HR 2206, Veterinary Workforce Expansion Act, 2005). Presently, there is a shortage of 1,500 veterinarians in the area of veterinary public health practice. Public health practice includes bioterrorism and emergency preparedness, environmental health, food safety and security, regulatory medicine, diagnostic laboratory medicine, and biomedical research (S 914/HR 2206, Veterinary Workforce Expansion Act, 2005). The projected shortage of veterinarians in public health practice during the next 20 years is 15,000 veterinarians. Only 2,500 veterinarians graduate each year from the 28 US schools and colleges of veterinary medicine, and most pursue private small animal practice.

As the emphasis by a generation of veterinary students on the science and practice of small animal medicine has overshadowed food animal medicine, public health has remained a minimized activity for the profession in general and for veterinary education in particular. One policy response to the anticipated shortage of public health veterinarians is the proposed Veterinary Workforce Expansion Act (S 914/HR 2206). The Senate and House bills were introduced in the spring of 2005 and are supported by the AVMA and the Association of American Veterinary Medical Colleges. This bill would amend the Public Health Service Act to establish a competitive grant program to expand veterinary education in public health practice and biomedical research. Schools and colleges of veterinary medicine, public health, and medicine as well as individual departments of comparative medicine and veterinary science would be eligible to apply for capital improvement monies that would support training and research in areas pertinent to public health practice. Both Senate and House bills have been referred to committees (the Health Education, Labor, and Pensions Committee in the Senate and the subcommittee on Health in the House).

It is uncertain whether creating educational opportunities for veterinarians through capital projects alone will overcome the capacity shortage in veterinary public health. The shift in the veterinary workforce toward small animal practice is largely market driven and has coincided with a 20% to 25% increase in dog and cat ownership over the past 10 years. Simultaneously, the breadth of small animal medicine has mirrored the technologic and scientific explosion in human medicine. Small animal practice has become specialized, and there has been a growth of board-certified specialists serving in private small animal practice. The increase in the number of specialists largely reflects the public demand for specialized veterinary care. However, the choice of veterinary graduates to pursue small animal general practice or achieve specialty certification can also be seen as a means of market differentiation. Market differentiation refers to the measures a company or individual takes to distinguish oneself from competitors in the market place. In the expanding market of veterinary services, veterinarians are choosing to distinguish themselves as small animal veterinarians in the entire veterinary market. This market competition among veterinarians, a response to greater demand for small animal veterinary care, appears to be deplet-

ing the pool of traditional public health practitioners. Attempting to combat this market force by attracting veterinarians toward public health practice will be challenging, and from an economic perspective, it will require increased public expenditure to compete with market-driven compensation available in private small animal practice.

Expanding the public health roles of small animal veterinarians is a strategy that will mitigate the shortage of veterinary public health practitioners by taking advantage of veterinarians' natural tendencies toward differentiation in the small animal veterinary marketplace. This strategy could likely be more appealing to veterinarians and less costly to government. Small animal veterinarians will seek well-defined and marketable opportunities to play important public health roles as a means of distinguishing their practices from competitors. The untapped potential of small animal veterinarians in public health corresponds to an untapped marketing strategy for small animal practice. Governmental public health agencies, veterinary professional organizations, and US schools and colleges of veterinary medicine can facilitate this strategy through financial inducements, continuing education, and curricular changes, respectively.

### **Five Public Health Roles for Small Animal Practitioners**

Small animal veterinarians can perform essential public health functions in the areas of surveillance of naturally occurring and intentionally introduced zoonotic diseases, disaster response to terrorist and environmental events, provision of surge capacity of regulatory veterinarians during animal health emergencies, identification of the human-animal bond and its impact on psychologic health of humans and their communities, and prevention of human disease. The mechanism for expanding the role of public health in small animal practice will necessarily involve US schools and colleges of veterinary medicine; the AVMA; the Department of Health and Human Services, the USDA; the DHS; state public health veterinarians; and nongovernmental organizations such as the American Academy of Veterinary Disaster Medicine, the National Coalition for Promoting Physical Activity, and the NAP.

Introduction of the Veterinary Workforce Expansion Act (S 914/HR 2206) provides a legislative opportunity for advancing public health policies involving small animal veterinarians. While this bill is in committee, the veterinary profession and public health community should petition the respective congressional committees to testify and make recommendations for amending the bill to include provisions addressing each of the following five public health roles.

**Surveillance of zoonotic diseases**—Outbreaks of zoonotic diseases may occur naturally or intentionally as a bioterrorist act. The recent outbreaks of H5N1 avian influenza in Asia and Europe, bovine spongiform encephalitis in the United Kingdom, West Nile virus infection and monkeypox in the United States, and H7N7 avian influenza in the Netherlands demonstrate that emergence of new infectious disease

anywhere in the world threatens humans across the globe.<sup>13</sup> Approximately 75% of new emerging or re-emerging infectious diseases worldwide are zoonotic.<sup>14</sup> Zoonotic diseases are transmitted via direct interactions between people and animals, by vectors (usually insects), and through contamination of the food and water supply.

The current veterinary reporting system for zoonotic disease is fragmented with some states separating animal disease reporting from human health reporting.<sup>15</sup> Depending on the state, veterinarians may be required to report only reportable diseases to local public health officials, various state agencies, or federal agencies. (In some states, rabies is the only zoonotic disease required to be reported). Programs to educate small animal veterinarians regarding possible zoonotic diseases and establishing information networks to improve communication and collaboration between veterinarians, physicians, and public health officials can be advanced through amendment of HR 2206. As a model, the NAS have proposed a coordinated mechanism for enhancing partnerships among local, state, and federal agencies and the private sector health community.<sup>16</sup> Other collaboration models include ArboNET, a CDC-operated surveillance system that monitors the geographic spread of West Nile virus in mosquitoes, humans, birds, and other animals.<sup>15</sup> Amendments to HR 2206 could direct the CDC to coordinate similar surveillance systems for other zoonotic diseases; provide funding for educational systems for veterinary students and small animal practitioners; and involve interprofessional agencies such as the NAP, the NAS, the American Public Health Association, and the American Association of Public Health Veterinarians in identifying opportunities for integrating communication systems among the health professions.

**Response to man-made and naturally occurring disasters**—Extensive educational training in basic biomedical sciences; population medicine; and a broad, multispecies, comparative medical approach to disease prevention and control makes veterinarians ideal candidates as responders to biological emergencies. The observation that over 80% of licensed veterinarians participate in the voluntary National Veterinary Accreditation Program<sup>3</sup> indicates the willingness of the profession to accept a meaningful public health role, as did the voluntary responses of hundreds of small animal veterinarians in the aftermath of Hurricanes Katrina and Rita. The veterinary accreditation program administered by the USDA APHIS works with private practice veterinarians to regulate animals crossing state and international borders. A parallel voluntary accreditation system could be administered by the DHS FEMA to certify private practice veterinarians in the response to biological disasters. An amendment to HR 2206 authorizing a FEMA-administered disaster response accreditation program should involve state veterinary medical associations and state public health veterinarians. Veterinary schools and colleges and organizations such as the AVMA and the American Animal Hospital Association could promote the importance of this role within the profession and to the public at large.

**Providing veterinary surge capacity in regulatory veterinary medicine**—Surge capacity is a health care system's ability to expand quickly beyond normal services to meet an increased demand for medical care in the event of bioterrorism or other large-scale public health emergencies. Routine functions of regulatory veterinarians across the nation are at risk during animal health emergencies related to environmental disasters, foreign animal disease or agroterrorism, or emerging zoonoses. For example, during the 2002–2003 outbreak of exotic Newcastle disease in poultry in California, up to 70% of USDA (regulatory) veterinarians were on-site to investigate, control, and prevent transmission of the disease.<sup>16</sup> The responsibilities of USDA APHIS-accredited veterinarians could be expanded to provide veterinary surge capacity in regions stressed by a USDA response to animal health emergencies. Veterinarians could fulfill regulatory roles such as antemortem inspection of cattle, swine, or fowl; facilitating vaccine campaigns; administering isolation and quarantine programs; sampling bulk tanks; analyzing culture results; and providing public information services. As 80% of the veterinarians are small animal practitioners, providing surge capacity will require training and education mechanisms regarding regulatory procedures to complement the small animal veterinarian's animal health skills. The HR 2206 could provide funding for enhancing the USDA APHIS National Veterinary Accreditation Program in this fashion. The US schools and colleges of veterinary medicine, schools of public health, and departments of veterinary sciences could serve as educational settings for regulatory training of accredited small animal veterinarians.

**The human-animal bond in public health**—The AVMA Committee on the Human-Animal Bond defines the relationship between people and other animals as mutually beneficial and dynamic and influenced by the behaviors that are essential to both. These benefits include emotional, psychologic, and physical interactions of people, other animals, and the environment. The veterinarian's role in the human-animal bond is to maximize the potential relationship between people and other animals.<sup>8</sup> Medical investigators suggest that human health benefits arise from a pet's contribution to quality of life in terms of people's physical and mental health and sense of social integration.<sup>17</sup>

Because most human relationships with other animals involve dogs and cats, small animal veterinarians are directly connected to the public health aspects of the human-animal bond. A landmark report by Beck and Katchner<sup>18</sup> revealed that physical contact with animals lowered blood pressure and slowed heart rate. Pet therapy has since been introduced into nursing homes, child psychotherapy, and prisons. Animals are currently being used in therapeutic programs for education, developmental disabilities, head and spinal cord injury, dementia, abused adults and children, and the terminally ill.<sup>19</sup> The Rankin County Mississippi Children's Advocacy Center uses pets to help children overcome fears of testifying against their accused molesters and abusers.<sup>19</sup> Children who live with pets have less illness-related school absenteeism.<sup>17</sup> These examples comple-

ment the traditional role of pet assistance by the use of guide and assistance dogs for the handicapped.

As spokespersons for the human-animal bond, small animal veterinarians should be integrated into programs that promote the psychologic, physical, and social well-being of our communities. Independent associations of health professions, such as the NAS's Institute of Medicine and the NAP, are ideally suited to facilitate the integration of small animal veterinarians into the public health policy and advise governmental agencies on policy initiatives. Interprofessional collaboration to promote community health and quality of life has been suggested by the IOM of the NAS.<sup>20</sup> The IOM was formed to serve as adviser to the nation to improve health. The institute provides unbiased, evidence-based, and authoritative information and advice concerning health and science policy to policy makers, professionals, leaders in every sector of society, and the public at large. The NAP was founded in 1981 to advise governmental bodies on problems of health care. More recently, it has focused on developing the interdisciplinary field. It is the only interdisciplinary group of health care practitioners dedicated to addressing the problems of health care, and it functions as an interdisciplinary policy forum that addresses public policy, education, research, and inquiry. The NAP is composed of 150 distinguished practitioners in each of the 10 major health professions recognized by the US Congress: dentistry, medicine, nursing, optometry, osteopathic medicine, pharmacy, podiatric medicine, psychology, social work, and veterinary medicine.<sup>21</sup> Amendments to HR 2206 should broaden the focus of expanding the veterinary public health workforce to include advisory capacity of the IOM and NAP in the development of integrated programs involving small animal veterinarians. This advisory capacity could be in the form of selecting funding preferences and advising government agencies on public health issues.

**Prevention of human disease**—Given their interprofessional makeup, the NAP and IOM are also well positioned to propose health initiatives that take advantage of interactions between the pet-owning public and small animal veterinarians. Examples of programs designed to promote the health of animals and people include dual species (human and canine) influenza and rabies virus vaccination clinics for pet owners and their pets, monthly heartworm preventative administration in dogs synchronized to coincide with monthly blood pressure monitoring in their human owners, and dog walking programs for overweight children and adults.<sup>22-24</sup> Veterinary collaboration with human health practitioners and organizations such as the National Coalition for Promoting Physical Activity, American Heart Association, NAP, and IOM could also lead to the development of pamphlets and educational materials that appropriately recommend preventative health and nutritional guidance for pets and pet owners at risk for chronic disease. Hypertension, diabetes, heart disease, kidney disease, and obesity are common chronic disorders affecting companion animals and people. Similar to the goal of promoting the human-animal bond, HR 2206 can identify the NAP and IOM as program advisors for funding initiatives addressing human disease prevention.

## Conclusion

The terrorist attacks of September 11, 2001, and the events associated with Hurricanes Katrina and Rita provide a policy window for addressing public health concerns. The magnitude of these disasters and publicity of their aftermath have sensitized the public, health professions, and individuals involved with political process to the real and potential deficiencies of public health policy. In addition, the logistic problems of intergovernmental response and manpower shortages realized during these national emergencies have ushered in a quest for improved methods of preparedness and cooperation across governmental agencies. The specter of these disasters and their implications for public health have spilled over into risks associated with emerging zoonotic diseases as evident by the public attention to West Nile virus infection, avian influenza, and bovine spongiform encephalopathy. Rising health care costs and the increasing prevalence of chronic disease, depression, and obesity have been important public health issues proceeding September 11, 2001, and the 2005 hurricanes. The presence of these issues in the consciousness of American society provides a window of opportunity for inventive policies to address public health problems.

Public health policy is, by nature, an interprofessional endeavor. Thus, an integrated approach to public health requires involvement of all the health professions. The predominance of small animal practitioners in the veterinary profession requires them to fulfill the public health responsibilities required of a valued health profession. The political necessity of consensus building among interest groups within the veterinary profession, across the health specialties, and among bureaucratic agencies will refine and reinforce the position of veterinary medicine in public health.

- a. Charitable giving to organizations supporting the care of animals following Hurricane Katrina as reported by the Humane Society of the United States (\$20 million), the American Society for the Prevention of Cruelty to Animals (\$13 million), American Humane (\$1.6 million), Noah's Wish (\$5 million), and PetSmart Charities (\$3.5 million).

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## Appendix

National Centers of the Veterinary Services division of the USDA APHIS.

- Centers for Epidemiology and Animal Health.
- Center for Veterinary Biologics.
- National Animal Health Policy and Programs.
- National Center for Animal Health Emergency Management.
- National Center for Animal Health Programs.
  - Aquaculture, Swine, Equine, and Poultry.
  - Ruminant Health Program.
  - Surveillance and Identification Program.
- National Center for Import and Export
  - Office International des Epizooties.
  - Sanitary Trade Issues Team.
  - Technical Trade Services Animal Products Technical Trade Services—Animals, Organisms and Vectors, and Select Agents.