"H.R. 1232 Veterinary Public Health Workforce Act of 2007"

Submitted by Dr. Alan M. Kelly, Dean Emeritus, School of Veterinary Medicine, University of Pennsylvania, for testimony before the **Subcommittee on Health of the House Committee on Energy and Commerce** on Wednesday, 1/23/08

Congressman Pallone and members of the Health Sub-Committee, thank you for giving me the opportunity to speak to you today. I am Dr. Alan Kelly, for 12 years I was dean of the School of Veterinary Medicine at the University of Pennsylvania. I remain on the faculty and am presently putting together a master's degree program in veterinary public health at the School.

The veterinary profession provides an extraordinary, and increasingly important link between agriculture and human medicine. As rated by state government experts, public concern over food safety is the number one factor that influences an increased demand for food supply veterinarians.

Veterinary medicine encompasses a number of distinct fields of clinical practice including the care of livestock, poultry, and farm raised fish, companion animals (cats and dogs, pet birds), horses, ecosystem health including conservation medicine and wildlife biology, public health, laboratory animal care, industrial medicine, and scientific research. The list of responsibilities continues to expand and it is not surprising that veterinary schools face a difficult challenge in producing sufficient numbers of graduates with appropriate depth of competence across the full range of services the profession is called upon to provide.

In the past decade there has been a convergence of animal, human, and environmental health issues that has created a crisis in veterinary medicine and in the Nation's overall health infrastructure. Unprecedented changes are occurring in food animal production and health, human and livestock demographics, patterns of disease, concerns for animal well-being and welfare, antibiotic resistance, environmental and wildlife health, and biotechnology. These are reviewed in the testimony and are all issues for which the veterinary profession must assume responsibility. To respond, veterinary schools must offer new curricula and new patterns of clinical training but they can not do so with the present limited facilities.

Education and Training of Veterinarians

Attaining a DVM degree requires at least 2 years and usually 4 years of undergraduate preparation followed by the professional curriculum that extends over 4 years. This is very similar to human medicine with the key difference being that internship is not required prior to licensure in veterinary medicine. DVM programs are uniformly subjected to accreditation by the American Veterinary Medical Association which sets standard requirements for accreditation including physical facilities and equipment, clinical resources, faculty, curriculum, and research programs. The United States presently has 28 schools of veterinary medicine.

Table 1 depicts the growth in numbers of veterinary colleges in the United States from 1968 to the present.

Year	Number of Vet.Colleges	Number of Students Graduated
1968 - 1969	18	1129
1969 - 1970	18	1124
1970 - 1971	18	1148
1974 - 1975	18	1408
1979 - 1980	23	1847
1984 - 1985	26	2155
1989 - 1990	27	2128
1994 - 1995	27	2135
1999 - 2000	27	2242
2004 - 2005	27	2306
2006 - 2007	28	2478

After the second world war, the nations needs were served by 18 veterinary schools that graduated slightly more than 1,000 students per year. It became increasingly clear to veterinary school deans at the time that this limited output was not meeting the needs of the Nation and that investments had to be made in personnel and physical facilities of the existing schools and new schools had to be established. After intense lobbying in Congress this need was recognized and in 1966 Dr. Philip Lee, assistant secretary for health and human services at HEW, stated,

We recognize the substantial contributions made by veterinarians to both animal health and human health. We also recognize that there is a manpower shortage in the field of

veterinary medicine as there is in most health manpower fields. Therefore, we would not object to amending the Health Professions Educational Assistance Act to allow grants for construction of veterinary medical teaching facilities and loans to students of veterinary medicine.

As a result of this and other testimony, the Veterinary Medical Education Act (VMEA) was passed in 1966 that permitted existing schools of veterinary medicine to expand their facilities and enrolments and also helped to establish 11 new veterinary schools between 1963 and 1983. Numbers of new graduates increased by approximately 1,000

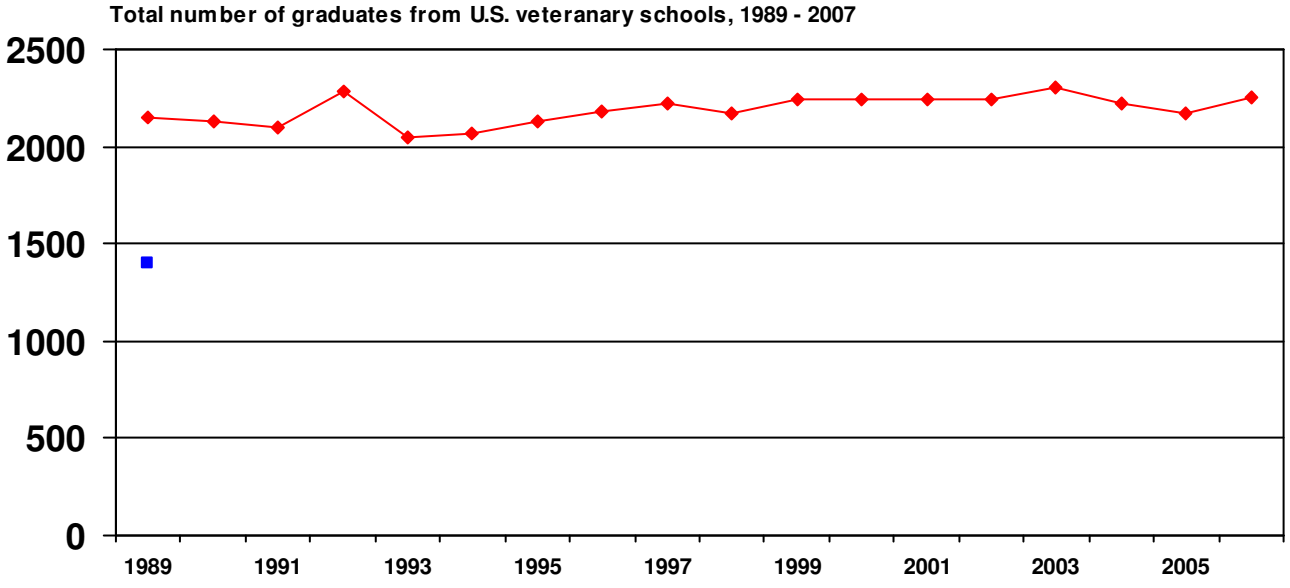

Figure 1 illustrates the numbers of new graduates from the Nations 28 veterinary schools between 1989 and 2006, it is flat! The reasons there has been virtually no increase in numbers of graduates are the same as they were in 1966, veterinary

schools have expanded as much as possible but most are operating with an old physical plant that constrains them from increasing their enrollment further. It is the physical plant that limits further expansion of student enrollment. Now, 40 years after passage of the VMEA, we respectfully request funds to update existing facilities in order to enroll more students, to increase faculty to educate these students, and for research laboratory space to conduct veterinary research.

Enrollment in US veterinary schools has been more or less static for the past 20 years yet the Nation's population has grown from 240 million to over 300 million during the same period. More students are applying for admission and there is the reputation that veterinary schools are harder to get into than medical schools. All schools are experiencing large and increasing numbers of applicants. At the University of Pennsylvania for example, we receive some 1500 applicants for 112 places. Because of the restricted opportunities, American students are increasingly going overseas for their veterinary education. Presently, over 1200 American students are receiving their veterinary education overseas at schools in the Caribbean, the United Kingdom, Australia and New Zealand. This number exceeds 10% of the total student enrollment in U.S. veterinary schools.

Responsibilities of the Veterinary Profession.

Table 2, shows theAVMA membership by employment.

	1990	2006
Private practice	%	%
Large animal exclusive	4.5	1.7
Large animal predominant	11.6	7.4

Mixed animal practice	8.7	7.8
Small animal exclusive	54	66.2
Small animal predominant	13.8	10.1
Equine	4.4	6
Other private practice	2.8	0.6
Public and Corporate	%	%
College & university	43	41.9
Federal Govt	21	12.4
State/Local Govt.	6.9	7.7
Uniformed services	6.9	4
Industry	12.1	21.9

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Farm animal practice.

In the past 30 years, American livestock and poultry production has undergone dramatic changes with greatly increased consolidation and integration of the poultry and swine industries into large production units commonly known as concentrated animal feed operations or CAFOs. Whereas these industries were at one time distributed across the country, they are now concentrated into several geographic areas, the chicken industry in the Delmarva Peninsula, Alabama, and Georgia for example and the swine industry in North Carolina and Iowa. As a result, the demand for veterinary services by these industries has also become geographically focused. CAFOs use less veterinary services per animal than was the case in the more traditional forms of production and the numbers of veterinarians associated with

these industries has dramatically declined though they remain important to the industry overall. The responsibilities of the veterinary profession towards food safety remains paramount, consumer are worried about Salmonella, campylobacter, avian influenza, and multidrug resistant organisma that may arise in these concentrated units and must be monitored. Additional responsibilities of the profession now involve the volume of manure that is produced in a concentrated area, and its impact on wildlife and on the environment. It is these concerns have spurred the growth of organic methods of production that are rapidly expanding in the U.S.

Consolidation of the dairy industry into large milking herds is also taking place driven by economies of scale and razor thin profit margins. Many small dairy farms have gone out of business making it difficult for large animal and mixed animal practitioners to survive in the rural setting. Training veterinarians to serve an industry that ranges farms of 20 to 25,000 cows as well as organic methods of milk production requires differing skills and a broader curriculum.

Clinicians whose primary source of income was from the dairy industry, also provided care for farmers in the beef, sheep, goat industries. With dairy vets in decline, a whole rural veterinary public health infrastructure is in jeopardy and the consequences for rural America are profound. Surveillance of livestock health and welfare in large parts of the country is left vacant. This obviously places the U.S. in a precarious situation, not only in health surveillance but in man power needs should an accidental or malicious emergency arise. With increased globalization of trade in food and greater access to foreign animal markets, the opportunities for foreign diseases to gain a foot hold in the United States are larger than ever before. Veterinary schools

and the profession have to invent new methods of surveillance of livestock, poultry, and wildlife, probably using remote sensing and digital technologies, to provide the infrastructure of veterinary public health and response. All of this requires research and translation into the field.

3 Federal and State Veterinarians

In view of the above concerns for disease surveillance and control, it is troubling that numbers of veterinarians employed by the Federal Government has declined by 40% since 1990 (Table 2) while remaining static in state public health services. One, estimate projects that if there were a serious animal health crisis involving a highly contagious disease, approximately 6,000 more federal and state veterinarians would be needed.

Veterinarians are employed in multiple ways in the Federal Government to ensure the safety of the food supply, including the safety of imported foods and live animals. They are needed in Federal veterinary diagnostic labs at the CDC, USDA, FDA, DHS, and the Department of the Interior, as well as at state and local public health labs, at food testing labs of the FDA and others responsible for testing the safety of the food supply, at environmental labs with capabilities for testing water and other environmental samples, and at the USGS for surveillance of wildlife.

The average age of USDA FSIS veterinarians is 54 and approximately 500 are expected to separate from the USDA in the next 5 years. Veterinary Services within Animal Plant Inspection Service project a shortfall of 298 veterinary officers by 2011. The Center for Disease Control and Prevention estimates a need for 200 specialty

trained veterinarians in the next decade, the USPHS has more than 50 unfilled positions and 50% of the present USPHS veterinarians are now eligible for retirement. To maintain its current effective strength, the US Army Veterinary Corps requires an addition of 45 new veterinarians each year. Overall, projections suggest that to satisfy only current needs in population health and public practice will require more than 500 of the 2,400 available U.S. graduate students each year.

The volume of work and problems confronting Federal veterinary public health services is illustrated by the following:

In 2006, over 27,000 nonhuman primates were imported into the United States, primarily for research. NHP import is highly restricted by CDC. 100% of imported NHPs are inspected on entry and required to undergo a minimum 31 day quarantine period on the importers' premises.

An unknown number of dogs are imported into the United States each year, but it is estimated to be over 200,000 annually. Likely, only a fraction of dogs are inspected on entry, especially at land border crossings. Recently, there has been a documented increase in the number of young puppies (too young for rabies vaccinations) being imported from rabies-enzootic countries, presumably for commercial sale.

Because the Nation must be prepared for restricting access and diagnosing animal diseases, greater numbers of graduates from veterinary schools are needed together with a large investment in post-graduate education. In public health alone, Dierks et al (J. Vet. Medical Education, 34, 529 – 537, 2007) project needs of 121 postDVM students per

year in animal health and food safety, and 151 in population medicine, public health and epidemiology.

In response to the shortfalls, 17 schools of veterinary medicine have either instituted new programs or expanded existing programs in veterinary public health with enrollment of a significant number of students. Epidemiology, preventive medicine and public health course offerings have been expanded but many of the programs rely on shared course work with schools of public health. These schools bring strength to the programs but the focus of the latter is naturally towards human health, chronic disease, diabetes, and social issues such as family violence, undeniably important topics but of limited relevance to issues of veterinary public health. Veterinary schools must now find the resources to train faculty and expand course offerings in the essential disciplines of veterinary public health.

4 Industry

Since 1990 the number of veterinarians in industry has increased by 40%, much of the increase has been in technical services offered by pharmaceutical companies. Veterinarians provide a number of other essential services to industry. These include:

a) Lab animal medicine veterinarians are responsible for the care and health of laboratory animals used by industry in drug trials and research. This includes caring for many species including rats, mice, dogs, and primates. Lab animal veterinarians are certified by the American College of Laboratory Animal Medicine. Much of the training takes place at the post-graduate level but the numbers entering the field is not adequate to meet the needs. Currently there are 50 unfilled positions with 25 at the director level.

b) Veterinary anatomic and clinical pathologists are responsible for monitoring the response of lab animals to pharmaceutical and chemical agents in drug trials, in drug discovery, and in research. Veterinary pathologists are board certified by the American College of Veterinary Pathology which has a membership of 1300 diplomats. A 2002 employer and training program survey confirmed a critical shortage of existing veterinary anatomic and clinical pathologists, and predicted the situation would worsen in the future due to continuing deficit in supply, increases in demand, and retirements in the current workforce. Presently there are 90 open positions for veterinary pathologists in academia and industry. In the next 10 years this number is projected to increase to 300 to 500 open positions. Much of the advanced training for this specialty takes place in veterinary schools and will need additional board certified faculty

5 Academia and research.

Veterinary academia is challenged to expand curricular offerings in the face of unprecedented changes in the demands now placed on the profession. A survey by the American Association of Veterinary Medical Colleges (AAVMC) estimated that member institutions need an additional 483 faculty at a start-up cost of $300,000 each to equip research labs, together with on-going salary. Projections are that U.S. veterinary schools must graduate 423 more veterinary students per year to meet the needs. Because of the sophistication of clinical and research training now required additional slots for 290 graduate students are also required.

Funding for advanced training should include residency programs in food animal medicine, and support for post graduate training in public health and wildlife biology. Training in basic research must also be expanded especially in immunology, infectious disease research including parasitology and microbiology, vaccines, food safety, genetics, animal models of human disease, oncology, and toxicology, epidemiology, and population biology. Infectious disease research is of special importance to veterinary schools since most of the new and emerging infectious diseases that have appeared in the past 15 years and infect humans (West Nile virus, Hanta virus, Nipah virus, BSE, SARS, monkey pox, avian influenza) have come from reservoirs of infection in wildlife. As people intrude further into wildlife areas and as unregulated live animal markets and the sale of bush-meat continues, more of these diseases will emerge to threaten the global community. It is here that the essential link between human and veterinary public health must come together to control the spread of these infections.