

# ***Emergency Needs in Veterinary Human Resources***



## ***FINAL REPORT of the AAVMC Task Force April 15, 2003***

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## **Charge to the Task Force**

The Association of American Veterinary Medical Colleges established the Task Force on Emergency Needs in Veterinary Human Resources to develop a focused action plan addressing human resource needs in veterinary public practice.

The Task Force defined public practice to include regulatory medicine in state and federal government (food safety, food security, prevention and control of foreign animal diseases), public health (epidemiology, risk analysis, risk management, prevention and control of infectious diseases), and veterinary research in the fields of public health, food safety, animal health, and comparative medicine. The Task Force recognized that there is a critical shortage of veterinarians in food animal practice in rural areas, but limited its discussion and recommendations to the areas of public practice described above.

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# I. Introduction

The Veterinarian's Oath clearly states our professional promise to meet a diverse set of societal needs "through the protection of animal health, the relief of animal suffering, the promotion of public health, and the advancement of medical knowledge." The veterinary medical colleges have a special duty to instill the essential knowledge, skills and competencies of our profession in students to ensure that they are capable of fulfilling the tenets of our oath and prepared to meet our societal obligations.

As we sit on the cusp of a new century and a new era with changing and challenging needs, there is a real concern that our profession is largely unidimensional in its focus, perhaps to the detriment of our societal responsibilities in public health, biomedical research, ecosystem management and biodefense. The Task Force strongly believes that the academic veterinary medical community must develop, support and implement a national action plan that refocuses our profession. We must retool and rebuild our critical capacity to be relevant and commensurate with the complex problems of society during this special time in our nation's history.

Many dramatic advances in both human and animal health during the past century can be traced directly to veterinarians working in the broad dimensions of public practice. The extent to which we are able to continue to make such improvements in the future depends upon the preparedness of veterinarians to make outstanding contributions in public health, biomedical research, and biodefense. Our ability to contribute, in turn, is dependent upon the relevance and quality of our veterinary medical education. Our future success will also be based on developing a critical mass of veterinarians with special skills, knowledge and training to effectively participate in veterinary public practice. Thus, our action plan is composed of a combination of recommendations that are intended to reconstruct the veterinary educational processes and content, increase awareness of the need for veterinary public practitioners and the career opportunities available to them, and ensure that we attract and recruit interested students who will pursue careers in veterinary public practice.

## II. Guiding Principles

The Task Force agreed that the following principles would guide its deliberations and provide a framework for its recommendations.

- The veterinary medical profession will not be successful unless we fulfill our societal obligations in public health, biomedical research, ecosystem health, and biodefense.
- It is the responsibility of academic veterinary medicine to assume a leadership role to address this critical issue.
- Our future success will depend on the veterinary medical colleges, schools and departments working in different ways and envisioning new directions.
- Academic veterinary medicine will need to establish new partnerships and alliances with government agencies, private corporations and develop consortial arrangements among each other and among institutions and organizations outside of traditional veterinary medicine.
- We must develop, support and implement a nationally integrated strategy, composed of both immediate and longer-term actions, to refocus our profession on veterinary public practice.
- The action plan must be given top priority and the AAVMC and member institutions must commit to sustained and appropriate levels of resources and attention to ensure execution of the plan.

### **III. Needs Assessment**

We conducted a survey of various state and federal agencies to determine how many veterinarians are working in public practice and what the projected needs are for these agencies over the next five years. Public practice, as defined by the Task Force, includes regulatory medicine in state and federal government, public health, and veterinary research in the fields of public health and food safety, animal health and comparative medicine.

There are approximately 5,000 veterinarians working in public practice. Of these, nearly 2,500 work in federal government agencies, approximately 700 work in state government, 1,600 work in industry, and approximately 250 work in academia and extension.

#### **Federal Government**

USDA is the largest employer of veterinarians in the federal government. A USDA Skills Gap Analysis predicts there will be a shortage of 584 Veterinary Medical Officers by 2007. The Skills Gap Study also itemized specific occupation competencies for veterinary medical officers. These competencies include accountability, flexibility, integrity, interpersonal skills, team building, conflict management, leadership, oral and written communication, technical credibility, problem solving, managing human resources, programmatic knowledge, scientific understanding, and supervisory skills.

#### **State Government**

We estimated that there were approximately 700 veterinarians currently working in state government. This includes state veterinarians, state public health veterinarians, state meat inspectors, and state veterinary medical diagnostic laboratories. State public health veterinarians are engaged in programs involving epidemiology, infectious diseases, vectorborne diseases, and zoonoses.

Most state agencies would like to employ more veterinarians. However, as long as most states are facing serious budget shortfalls, it is unlikely that additional positions will be created. In fact, many states are facing strict hiring freezes and cannot fill existing vacancies. In addition, some of those states that manage their own meat inspection programs have indicated that they would consider discontinuing these programs at the state level, leaving the inspection responsibilities to the federal government.

### **Biomedical Research**

There is a critical need for veterinarians in biomedical research. Anecdotal information indicates a need for nearly 100 additional veterinarians who are board certified in laboratory animal medicine. The Institute for Laboratory Animal Research of the National Academy of Sciences is addressing this issue by studying how more veterinarians can be prepared for careers in laboratory animal medicine, comparative medicine and comparative pathology.

The Recruitment Committee of the American College of Veterinary Pathologists (ACVP) has completed a study to determine if there currently is, or will be, a shortage of veterinary pathologists. The ACVP study indicates that there are approximately 150 positions for board-certified veterinary pathologists that are currently vacant. The study predicts there will be an additional shortage of approximately 65 veterinary pathologists in the next five years.

### **Additional Needs**

In addition to filling existing vacancies and meeting the demand created by expected growth within state and federal agencies, there will likely be an increased role for veterinarians working in biodefense. The Advisory Panel to Assess Domestic Response Capabilities for Terrorism Involving Weapons of Mass Destruction has identified the need to promote better education and training for veterinarians (available at <http://www.rand.org/nsrd/terrpanel/charter.html>).

The Advisory Panel's report to Congress stated:

There is a lack of expertise and sheer numbers of personnel available to work to secure the U.S. agricultural infrastructure. Not enough appropriately trained veterinarians are capable of recognizing and treating exotic livestock diseases in the United States because fewer people are entering veterinary science, reflecting the lack of educational support and financial incentive given to the discipline in the country and because most veterinarians focus on domesticated pets rather than large-scale husbandry. Veterinary degree curricula should include courses on foreign animal diseases.

The Advisory Panel recommended “that the Secretary of Agriculture develop and that the Congress fund programs to improve higher education in veterinary medicine to include focused training on intentional attacks, and to provide additional incentives for professional tracks in that discipline.”

## IV. Action Plan

The Task Force reviewed a number of reports, meeting summaries and committee deliberations.\* These documents make it readily apparent that the veterinary profession is not fulfilling its responsibility to meet critical needs for biomedical researchers, public health workers, biodefense experts and other public practitioners throughout government, industry and academe. The profession is on the brink of a “lost opportunity” if it doesn’t respond to new public practice demands.

The Task Force believes there is a need for both short term and long term actions. The actions should include a mix of incremental changes and actions that are designed to improve and refocus our current systems, as well as more significant, revolutionary and far-reaching ideas for the future. Thus, the action plan can be envisioned as a series of activities in a 2x2 table that enables us to concurrently change and improve “what is” and create “what isn’t.”

	Short Term	Longer Term
Incremental Changes and Actions	A. Can Identify and Achieve Quickly	B. A longer viewpoint of step-by-step change
Revolutionary Changes and Actions	C. Quantum Leaps Done Quickly	D. Far-Reaching Stretch Goals and Actions

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\* The action plan was formulated by the Task Force based upon the needs assessment; comments and recommendations from the AAVMC Conference, *Agenda for Action: The Role of Veterinary Medicine in Public Health and Biodefense*, held in Washington, D.C. November 1-3, 2002; reports from ACVP and ILAR; the CDC/AAVMC/AVMA meeting on *Converging Issues in Human and Veterinary Public Health*, held in Atlanta December 5-6, 2002; the *Crisis of Lost Opportunity Symposium* held in Davis, California May 9-11, 2002; and the summary of the report from the National Academy of Sciences, *Who Will Keep the Public Healthy?* (2002).

## **A. Short Term, Incremental Actions**

1. Broaden student exposures to careers in public practice, especially during preveterinary and early veterinary education. This action can be accomplished through speakers, workshops, career days, externships, summer jobs, etc.
2. Assign champions and role models at each college to mentor students and encourage them to continue their career development and interest in public veterinary practice.
3. Develop continuing education and certificate programs for private practitioners to make them aware and more competent in areas of emerging diseases, zoonoses and biodefense. This action should be taken in partnership with state veterinary medical associations and state government offices.
4. Establish a dynamic national team to present seminars and workshops for preveterinary and first and second year veterinary students to increase their awareness and interest in the diverse careers of public practice. The team should include members of academe, government and corporate organizations. Funding should come from government agencies and private corporations that will benefit from increased student interest.

## **B. Long Term, Incremental Actions**

1. Establish co-curricular modules for students to learn more about public practice, develop critical skills and knowledge, and combine these didactic activities with real-life experiences. These modules should eventually be developed as web-based materials available to all colleges, schools and departments and coordinated through the assigned faculty champion(s).
2. Establish or make better use of existing Summer Institute Programs to encourage, train and develop a cadre of professional students and new graduates that are prepared to enter careers in public health, biomedical research and biodefense. Simultaneously, secure funding for these students to work during summer breaks at the Institutes.

3. Conduct curriculum reviews and make essential changes in content to impart the necessary skills and knowledge to develop veterinary students and prepare them for careers in public practice.
4. Develop dual degree programs (DVM-MPH and DVM-MS ) that will lead to structured career paths for students during their veterinary education. The dual degree programs would lead to specialties in epidemiology, biodefense, preventive medicine, public health, etc. This action could be accomplished by initiating more dual degree programs and/or by expanding existing programs.
5. Conduct a review of applicant selection criteria and processes to foster the identification and selection of students with an interest in public practice.

### **C. Short Term, Revolutionary Actions**

1. Create a national veterinary medical service program. A federal legislative initiative should be devised to motivate students and new graduates to enter careers in biomedical research, public health, biodefense, food security and safety, ecosystem health. The AAVMC, in partnership with the AVMA, should prepare the legislative package, gain federal agency support, and create a special team to gain legislative support. The incentives can take the form of scholarships, early commissions with salary, loan forgiveness, etc. Students would be obliged to serve in federal government agencies, state agriculture, public health or environmental organizations, or other underserved areas.
2. Create a new Veterinary Corps. The Veterinary Corps would target existing private practitioners, give them special training so that they will be prepared to be part of a public and animal health response team that would be prepared for national emergencies involving bioterrorism, agroterrorism and further emergence of zoonotic pathogens.
3. Create a Target Enrollment Program for veterinary medical colleges. The colleges could accept a larger number of students per class based on the excess being recruited and selected from a special pool that will enter public practice careers.

4. Develop a partnership between NIH and AAVMC to plan, develop and implement a program to fund NIH-veterinary medical scholars. NIH fellowships would be offered to students and post-DVM professionals to enter biomedical research careers. An emphasis will be given to develop basic researchers, comparative medical researchers, lab animal experts, pathologists, toxicologists and experts in molecular level research, genomics, proteomics and other experts based on the needs of NIH, academic institutions, government agencies and private corporations.
5. Establish regional consortia among colleges and schools to collectively share and better prepare students for public practice. Build corporate and government sponsorships for the consortia and prepare students for careers in government agencies and corporate research development.\*

#### **D. Long Term, Revolutionary Actions**

1. Establish a small group of collaborative, intellectual hubs – Centers for Zoonosis/Public Health/Emerging Infectious Diseases. These centers would involve the development of consortia that would include veterinary medical colleges, medical colleges, schools of public health, wildlife departments, social sciences departments, etc. The hubs or centers would develop research, teaching and outreach programs. This action could be combined with C-5.

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\* The consortia concept was a major theme that emerged from the Pew Study on “Future Directions for Veterinary Medicine” (1989).

# Summary of Action Plan

In addition to listing the actions as part of a 2x2 table, they can also be summarized based on fulfilling 4 goals that serve as the foundation of the action plan.

1. Creating awareness and knowledge
2. Building capacity
3. Imparting skills and competencies
4. Forming strategic alliances

## GOAL 1: Creating Awareness and Knowledge

<b>Action</b>	<b>Time Frame</b>	<b>Responsibility</b>	<b>Resources</b>	<b>Outcome</b>	<b>Indicators of Success</b>
Broaden student exposures and experiences to public practice careers (A-1)	ST	Associate Academic Deans	Internal to colleges/schools	Veterinary students have a better understanding and appreciation of public practice	10% of veterinary students will pursue public practice careers
Establish a National Team(s) to present workshops and seminars to preveterinary and early veterinary students (A-4)	ST	AAVMC and a subset of deans and private sponsors	Private, corporate, government sponsorship to fund the teams	Veterinary students have a better understanding and appreciation of public practice	10% of veterinary students will pursue public practice careers

## GOAL 2: Building Capacity

Action	Time Frame	Responsibility	Resources	Outcome	Indicators of Success
Assign college champions, role models and mentors to students (A-2)	ST	Deans and Associate Deans	Internal to colleges/schools	Each college will have a champion for public practice	Each student with an interest in public practice will have a mentor
Develop CE and Certificate Programs for private practitioners on bioterrorism, emerging diseases and public health (A-3)	ST	Consortia of faculty and State Veterinary Medical Associations	CDC, Homeland Security, Health & Human Services	Private practitioners will be knowledgeable, conversant, and prepared to identify and respond to zoonoses and agents of bioterrorism	25% of private practitioners will have CE and/or certificates by 2004, and 50% by 2005
Develop dual degree programs to build our capacity in epidemiology, biomedical research, public health and bioterrorism (B-4)	Mid-term	Individual colleges/schools and/or consortia	Individual colleges, students and sponsors, including state and federal agencies	Educational degree programs will be in place as dual programs for students interested in public practice	25% of colleges will have dual MPH/DVM/VMD programs in place, either individual or as part of consortia
Conduct a review of selection criteria and processes to identify & select students interested in public practice (B-5)	Mid-term	AAVMC	Minimal; done via e-mail surveys and contacts	College Admission staffs will learn from others about successful selection criteria & processes	Successful criteria and processes will be adopted and used by colleges & schools in selecting students for public practice careers & achieve a 75% success rate
Create a National Service (C-1)	ST	AAVMC/AVMA and state VMAs	Federal legislation (debt repayment; tuition; capitation grant)	Funds and other incentives will be available to encourage and prepare students for public practice	500 veterinarians will be trained and enter public practice careers by 2007

**GOAL 2: Building Capacity (cont'd)**

<b>Action</b>	<b>Time Frame</b>	<b>Responsibility</b>	<b>Resources</b>	<b>Outcome</b>	<b>Indicators of Success</b>
Create a National Veterinary Corps from private practitioners to prepare for bioterrorism, public health and animal health emergencies (C-2)	ST	AAVMC/AVMA, state and local VMAs	State, Federal legislation, Homeland Security, Health & Human Services, USDA	A special corps of existing private practitioners will be prepared to respond to national emergencies for agro- or bioterrorism	1,000 private practitioners will be part of a National Corps by 2005
Create a special enrollment program targeted at students who will select public practice careers [could be in association with National Service] (C-3)	Mid-term	Individual colleges/schools with university support	Individual colleges and schools or part of legislation approving a National Services	Students will enter veterinary college with the specific intent and obligation to enter public practice	500 veterinary graduates will enter public practice careers by 2007

### GOAL 3: Imparting Skills and Competencies

Action	Time Frame	Responsibility	Resources	Outcome	Indicators of Success
Develop co-curricular models for students to impart skills and competencies needed in public practice (B-1)	Mid-term	Faculty, consultants or partners or consortium	Seek corporate and/or government sponsorship or educational grant	Students will acquire new skills and competencies for future success	3 model programs will be developed and implemented by 2006
Establish or make better use of Summer Institutes to improve skills and experiences in public practice (B-2)	Mid-term	Individual colleges/schools	Internal to colleges and students	More students receive training and education that result in acquiring core competencies	Interested students from 25% of veterinary colleges/schools will be included in summer programs
Review existing curriculum and make appropriate changes to build skills and knowledge for public practice careers (B-3)	Mid-term	Individual colleges/schools and appropriate committees	Internal to colleges/schools	Curricula are reviewed and adjusted based on new desired skills and knowledge	All curricular reviews will consider public practice and the linkage to better preparing public practitioners

### GOAL 4: Forming Strategic Partnerships

Action	Time Frame	Responsibility	Resources	Outcome	Indicators of Success
Develop a new NIH/AAVMC Partnership Program to encourage students and DVM/VMDs to move into biomedical research careers (C-4)	Mid-term	AAVMC and small subset of deans; NIH	NIH	A new cadre of biomedical researchers will emerge from colleges/schools of veterinary medicine	A new AAVMC/NIH partnership with training programs exclusively for DVM/VMDs will be completed by 2005
Establish regional-college consortia to share faculty, programs, and students and prepare students for public practice careers (C-5)	Mid-term	Individual colleges and schools – initiated by deans	Seek corporate and/or government funding	Colleges/schools will share faculty and facilities and exchange students to enhance and encourage public practice careers	At least one major university consortium will be established and operating by 2005
Establish several National Centers for Zoonosis/Public Health/Emerging Infectious Diseases (D-1)	Long-term	Individual colleges/schools, consortia, university and government agencies	Health & Human Services, NIH, USDA	Multi-university and government agencies will collaborate to establish centers	Plans will be developed and funds will be secured for 2 to 3 centers by 2006

## Conclusion

By definition, a successful and preeminent organization must be capable of anticipating and meeting the critical demands and needs of society. Thus, the veterinary medical profession will be successful only if we anticipate the demand for veterinary services and meet our obligations and responsibilities in public health, biomedical research, ecosystem management and the broadening issues of food, health and society.

Contemporary challenges in food safety, food security, emerging infectious diseases, new zoonosis, agro- and bioterrorism are now part of our reality. At the same time, a new molecular understanding of science has created great promise in genomics and proteomics, and a new dynamic for biology, medicine, agriculture and health. No era has held so much opportunity or so many expectations from our profession and ourselves. Veterinary medicine is unique among the health sciences, and a profession whose time to contribute has truly emerged.

Every profession has its defining moments – points in time when talented individuals work cooperatively and can influence a course of events for generations to come. Can anyone not say that we are living at such a point in time? We must define a new and aggressive 21<sup>st</sup> Century plan of action to meet the challenges of today and resolve the contemporary issues facing us. We must also develop scenarios that envision a very different future.

We can still shape our future – one of real purpose, with a sense of significance, that meets the needs of society, especially with regard to biodefense, biomedical research and public health. The future does not wait for anyone; we need both a sense of urgency and strong leadership. This action plan can serve as a blueprint to help us respond to society's needs and create a new future for veterinary medicine.