One Health Newsletter

A quarterly newsletter highlighting the interconnectedness of animal and human health

Winter 2009 **Volume 2 Issue 1**

In This Issue

Articles:

Special Section:

This newsletter was created to lend support to the One Health Initiative and is dedicated to enhancing the integration of animal, human, and environmental health for the benefit of all.

The Perpetual Dialectics, i.e. the Controversy and Debate, Between Foresight and Hindsight.

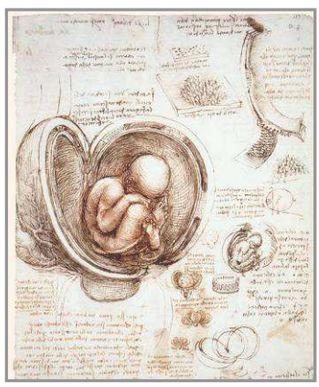
A Condensation of The Sixth Recognition Lecture to the Association of American Veterinary Medical Colleges Washington, DC - March 17, 2008

Printed with permission from the Journal of Veterinary Medical Education. The entire Sixth Recognition Lecture is available at: http://jvmeonline.org/content/vol35/issue3/index.dtl

John T. Vaughan, DVM

Reckoning geologic time in terms of one year, the horse is 4.36 days old, man 8.5 hours, the domesticated horse 44 seconds; and modern medicine since Pasteur's proof of the Germ Theory in 1860 is one second old. Over the past 11,000 years since man first domesticated livestock and came to rely on animal husbandry and agriculture rather than hunting and gathering to provide a more stable source of his needs, he also learned the necessity to provide for the needs of the herd. The survival of the human population depended upon the health and prosperity of the flocks and herds, and health and safety of the group subordinated concern for the individual. In this evolution of animal cultures and early medicine, those charged with such responsibilities practiced on man and beast alike. Primitive societies recognized some contagions as incurable and had the common sense to isolate and abandon infected animals and move the well ones to distant premises. Regions and sources of endemic diseases, such as sleeping sickness districts of Central Africa, were conscientiously avoided.

This strong orientation toward animals with the greater understanding of anatomy, physiology and disease processes also benefited human medicine. In the concept of one medicine, it is a fundamental understanding that population medicine and public health evolved from comparative medicine and herd health. In ancient Egypt, the early healers, identified as priests, functioned as both physicians and veterinarians. In other regions such as Mesopotamia and Persia, this evolution suffered from superstitions about handling the human dead and religious restraints against anatomical studies. Faulty extrapolations were perpetuated throughout history, case in point – DaVinci's magnificent anatomical drawings for his medical students which pictured the human fetus in the womb showing a cotyledonous chorion



Anatomical Drawing by **Leonardo da Vinci**

which exists in ungulates such as the cow but not in humans.

In every emerging civilization where comparative medicine was uninhibited, allowing for the free exchange of knowledge and cross-fertilization of ideas, medicine has advanced on a stratified scale. Conversely, where religion or social mores impose boundaries of sanctity or propriety on clinical observations and experimentation, invaluable sources of medical knowledge are denied. This dichotomy exists unabated to the present day, and dilemmas of medical ethics and scientific controversy continue to confound otherwise intelligent dialogue, a prime example being stem cell research. In *Guns, Germs, and Steel* (W. W. Norton, NY, NY 1998) Jared Diamond recounts man's mixed success in today's sophisticated age of technology in trying to cope with new and re-emerging diseases of humans that had their origins in animals predating history.

Strategic planning in veterinary medical education may be traced back to 1806 when Dr. Benjamin Rush of the medical school faculty of the University of Pennsylvania urged the Philadelphia Society for the Promotion of Agriculture to support veterinary education. Throughout the 17th and 18th centuries both medical and veterinary medical education in the United States existed as an apprenticeship. Formal education necessitated matriculation in Europe. However, the rapid progress of medicine and comparative medicine in the 19th century by the veterinary physicians such as Edward Jenner (1749-1823), Claude Bernard (1813-1876), Louis Pasteur (1822-1895), Rudolph Virchow (1821-1902), and Robert Koch (1843-1910) was having a growing impact in North America. The Golden Age of Bacteriology (1860 to the turn of the century) revolutionized wound care, obstetrics and surgery, as well as the prevention and control of contagious diseases. The disastrous effect of plagues such as tuberculosis, cattle tick fever, contagious pleuropneumonia, anthrax, glanders, hog cholera, foot and mouth disease, influenza, rabies, and brucellosis - many affecting humans and animals alike - galvanized action by government and the public to establish schools of veterinary medicine and federal agencies charged with the responsibility for control and eradication of these threats to the public health and national economy. Between 1852 and 1938, 46 veterinary schools were started, many described as "propriety schools", and although 34 of them were extinct by 1947, they did serve the useful purpose of supplying veterinarians to the United States at a time when they were desperately needed.

Weathering the vicissitudes of two World Wars and the Great Depression within less than three decades, plus the replacement of the horse as the principal mode of draft and transportation by the gasoline engine were challenges unrivaled by any historical events since the Revolutionary War of the 18th century and the Civil War of the 19th century. But, remarkably, the profession rose to the challenge, and between 1944 and 1957, the number of schools of veterinary medicine increased from 10 to 18. Curricula were strengthened, requirements increased, specialty boards initiated, and a nationwide program of regional education formalized to increase the opportunities for a veterinary education. The Veterinary Medical Education Act of 1966 helped to establish 9 more new schools by 1979 and increase the number

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The nation has a pressing need for more veterinarians dedicated to protecting the public health, the national security, and readiness for emergency response.

of new graduates by nearly a thousand. The 1972 Terry Report (National Academy of Sciences) further emphasized the need for food supply veterinary medicine and public health, including greater attention to zoonotic diseases and environmental health and the importance of comparative medicine.

The veterinary profession calls for Congress to invest in human capital that would revitalize the spirit of this nation and secure its future.

The manpower survey of 1978 (A. D. Little) surprisingly assessed a current balance and future oversupply. This resulted in a retrenchment during the next decade, and a shift in emphasis to small and companion animal medicine. Still, a later survey in 1998 reinforced the earlier study, de-emphasizing food animal practice and demand for veterinarians in the academic and government areas.

But eight years later, new studies launched by the Association of American Veterinary Medical Colleges recognized a profession in transition with, among other recommendations, a renewed emphasis on food supply veterinary medicine and public health. Today, the 110th Congress is being petitioned for subscription to the Veterinary Public Health Workforce Act of 2008 calling attention to the pressing needs of the nation for more veterinarians dedicated to protecting the public health, the national security, and readiness for emergency response.

John T. Vaughan, DVM

Courtesy Auburn University College of Veterinary Medicine Progression of Deans

At a time when the United States is being compared to France and even to the decline and fall of the Roman Empire, when we are virtually paying tribute to the Republic of China, and are being bought by the hegemony of petroleum states and other foreign governments, the profession calls for the 110th Congress to invest in human capital that would revitalize the spirit of this nation and secure its future.

(Note: A bibliography of 33 references is available in the original paper to be published in the Journal of Veterinary Medical Education.) http://jvmeonline.org/content/vol35/issue3/index.dtl

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One Health Steering Committee Update

Carina Blackmore, DVM, PhD

One Health Initiative forms Steering Committee.

The work of the AVMA One Health Initiative Taskforce (OHIT) http://onehealthinitiative.com/taskForce.php is continuing. A One Health Initiative Steering Committee (SC) has been formed. The main purpose of the Committee is to create a National One Health Commission (NOHC). The NOHC is expected to complete the implementation of the recommendations of the OHIT http://www.avma.org/onehealth/recommendations.pdf over a three to five year period. We discussed the Taskforce report in detail in our July, 2008 edition of the One Health Newsletter http://www.doh.state.fl.us/Environment/community/One_Health/OneHealth.html

Ronald Atlas
Chair of the One Health Steering Committee

The Interim Chair of the Steering Committee, Lonnie King, DVM, MS, MPA has led the effort to recruit One Health Initiative supporters and members to the SC. Currently, the following organizations are represented: Association of American Medical Colleges (AAMC), American Association of Veterinary Medical Colleges (AAVMC), American Medical Association (AMA), American Public Health Association (APHA), American Society for Microbiology (ASM), American Society for Tropical Medicine and Hygiene (ASTMH), American Veterinary Medical Association (AVMA), the Association of State and Territorial Health Officials (ASTHO), Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), National Institute for Environmental Health Sciences (NIEHS), the National Park Service (NPS), and the Wildlife Conservation Society (WCS). The work to solicit members is continuing and several other agencies and organizations are expected to join shortly.

Organizations represented on the One Health Steering Committee

- ***AAMC***
- ***AAVMC***
- ***AMA***
- ***APHA***
- ***ASM***
- ***ASTMH***
- ***AVMA***
- ***ASTHO***
- ***CDC***
- ***FDA***
- ***NIEHS***
- ***NPS***
- ***WCS***

Ronald Atlas, PhD, (ASM) Graduate Dean, Professor of Biology and Public Health, and Co-director of the Center for Health Hazards Preparedness at the University of Louisville, was selected to be the new Chair of the Steering Committee. Elizabeth Lautner, [DVM, MS, United States Department of Agriculture (USDA) will serve as Vice-Chair. The day-to-day activities of the Steering Committee will be coordinated by three administrative staff members: Lynne White-Shim, DVM, MS (AVMA), Barbara Hyde, MBA (ASM) and Barry Dickinson, PhD (AMA). At this time, the administrative staff is considering prospects for securing a 'Project Manager' to ensure day-to-day efficiency in the near term.

A communication workgroup chaired by Carina Blackmore, DVM, PhD (ASTHO) was formed to develop a Communications Plan. Tentative plans for a policy oriented One Health Summit in 2009 were also discussed. A subcommittee was formed to continue the planning efforts. The committee is chaired by Marguerite Pappaiouanou, DVM, MPVM, PhD (AAVMC)

Bruce Kaplan, DVM was requested (and agreed) to continue serving as the "Contents Manager" of the current One Health Initiative website

http://www.onehealthinitiative.com for the Steering Committee as it transitions from the Kahn-Kaplan-Monath One Health team to the auspices of the Steering Committee.

Carina Blackmore
Chair of the Communications Workgroup

The Steering Committee is scheduled to meet again in March, 2009 to further develop and expand upon implementation strategies.

Dr. Carina Blackmore is Chair of the One Health Initiative Steering Committee's communications workgroup, a member of the One Health Newsletter editorial board and is Florida's State Public Health Veterinarian.

Special Section

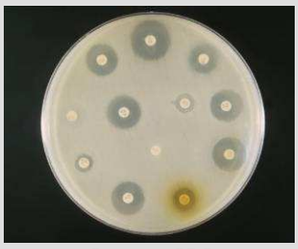
Three Perspectives on the Judicious Use of Antimicrobials

Antibiotic resistance has become one of the leading health-care crises in the United States.

Bugs vs. Drugs: The Escalating Problem of Antibiotic Resistance

John G. Gums, Pharm.D.,FCCP

Antibiotic resistance has become one of the leading health-care crises in the United States. What once was a problem confined to a small percentage of hospitalized patients has now become a clinical dilemma for any practitioner treating in-patients or out-patients. The frequency of community acquired methicillin resistant *Staphylococcus aureus* (CA-MRSA) is now over 55% in many Florida communities. More recently, the emergence of multiple drug resistant *Klebsiella* (MDR-*Klebsiella*) has forced hospital clinicians to use more expensive and toxic medications. Even the once reliable trimethoprim-sulfamethoxazole (TMP-SMX), used for years as empiric therapy for uncomplicated urinary tract infections is now ineffective in 15-25% of *E. Coli* infections of the bladder.



Courtesy CDC

There is a documented lack of new antibiotics in the pharmaceutical research pipeline.

It appears we are entering a post-antimicrobial era, where historically treatable infections are a death sentence because there are no effective antibiotics to treat the patient. Making matters even worse, the Infectious Disease Society of America (IDSA) has documented the lack of new antibiotics in the pharmaceutical research pipeline. The scenario of increasing antimicrobial resistance coupled with a lack of new, novel antibiotics is not just probable, it is happening now.

Three primary factors associated with increasing antibiotic resistance:

- ***Domestic and international travel***
- ***Increased patient demand***
- ***Less than adequate prevention of infections through public health measures***

The Center for Disease Control (CDC) has identified three primary factors associated with increasing antibiotic resistance. Domestic and international travel, increased patient demand, and less than adequate prevention of infections through public health measures are all areas for research and improvement. With increasing pressure from patients expecting an antibiotic, prescribers are under significant pressure to use antibiotics even when they believe they are not necessary. The fear of potential litigation for failure to treat fuels these pressures even more. Educational programs designed to alert the general patient population to the consequences of inappropriate antibiotic use have uniformly failed. In many cases, local school systems will not allow a sick child back into the school unless they are on an antibiotic.

Recently, a major grocery chain throughout the south began offering certain antibiotics free to any customer with a valid prescription. This practice has the potential to drive up the overall use of antibiotics and will certainly increase the selective resistance pressure on the free antibiotics. This short-sighted public relations move has the potential for long-term negative health implications for patients throughout Florida and the southeast.

Inappropriate use of antibiotics is the major driver of escalating resistance.

Strategies to reduce increasing pressures for antibiotic resistance include:

- ***avoiding the exclusive use of any one antibiotic***
- ***minimizing the use of excessively broad-spectrum antibiotics***
- ***rotating antibiotic use between classes***
- ***using a "targeted" approach based on culture and sensitivity reports***

A patient-centered, multidisciplinary approach is necessary.

While the factors driving antibiotic resistance are diverse and multifactorial, most researchers agree that inappropriate use of antibiotics is the major driver of escalating resistance. Inappropriate use includes not only using antibiotics when they are not indicated (i.e. viral infections), but also the use of incorrect duration of therapy, improper dose, or even the wrong antibiotic. To help reduce resistance pressures, clinicians must become more cognizant of the impact of inappropriate use and strive to clinically maximize each antibiotic prescription.

Strategies that have been recommended to reduce increasing pressures for antibiotic resistance include: avoiding the exclusive use of any one antibiotic, minimizing the use of excessively broad-spectrum antibiotics which can induce resistance, rotating antibiotic use between classes rather than within classes, incorporating shorter courses of antibiotics possibly at higher doses vs. the traditional lower doses for longer periods of time, and using a "targeted" therapeutic approach whenever possible, aided by more culture and sensitivity reports and a de-escalation approach when the microorganism is identified.

Complementing these strategies is the need for each clinician to be aware of their local resistance information. Peer-review articles documenting resistance at national, regional, or even a state level are often not helpful to individual clinicians since so many variables can affect resistance development. Prescribers are encouraged to work closely with their microbiology laboratories and to have the most recent susceptibility or antibiogram data sent to them on a regular basis. Tracking resistance patterns over time at the local level will alert prescribers when specific antibiotics are losing their effectiveness and minimize the use of pseudo-effective antibiotics. This practice will also reduce the need for prescribers to have to re-treat patients and ultimately reduce the pressures for super-infections (i.e. *Clostridium difficile*) from developing.

While the problem of antibiotic resistance seems overwhelming and daunting, the option to managing it is unacceptable. A patient-centered approach by a multidisciplinary team can successfully reduce resistance pressures and maintain antibiotic effectiveness. All health-care professionals are urged to take an active role in this challenge.

Dr. Gum is Professor of Pharmacy and Medicine at Departments of Pharmacy Practice and Family Medicine and Director of the Antimicrobial Resistance Management Program, University of Florida, Gainesville, Florida

The American Veterinary Medical Association Promotes Judicious Therapeutic Use of Antimicrobials

Christine Hoang, DVM, MPH, CPH

Veterinarians take an oath to protect animal health, relieve animal suffering, and promote public health at the start of our veterinary careers, and we all take that commitment very seriously. The Veterinarian's Oath itself really

.

Antimicrobial resistance is an important example of a problem that requires a One Health approach.

Veterinarians apply the One Health concept every time they prescribe a drug by evaluating whether a treatment's benefits will outweigh its risks to the patient and to public health.

Courtesy Scott Bauer (ARS)

The fundamentals of food animal medicine are the same as those of public heath — control and prevention of disease.

speaks to the convergence of human and animal health, and the evolution of One Health. Therefore, we share many of the same concerns, such as antimicrobial resistance, with our human and environmental health counterparts.

The topic of antimicrobial resistance is an important example of a problem that requires the approach and application of One Health concepts. Resistance to antimicrobials develops in humans, animals, plants, and other organisms regardless of whether antimicrobials are used. Recognizing that we need to preserve the efficacy of these drugs, not only for humans, but also for animals and for plants, the responsibility of that preservation must be shared by all those who use antimicrobials as well as those impacted by its use.

The veterinary profession strives to achieve optimal animal health as well as animal welfare and human health. The fundamentals of food animal medicine and population medicine are the same as the fundamentals of public heath — control and prevention of disease. In that sense, we are all working toward the same goal of health. However, veterinarians are unique in that they are severely limited in the tools available for disease control and prevention. That limitation is attributable, in part to the profession's consideration of One Health. Veterinarians apply the One Health concept every time a drug is prescribed by evaluating whether a treatment's benefits would outweigh its risks to the patient and to public health. As veterinarians make recommendations for treatment, they have the duty to use such agents to promote animal health and welfare in such a way that also safeguards the public's health.

One of the most important roles that veterinarians take to protect animal health and human health is the judicious use of antimicrobials. The continued availability of safe, effective antimicrobials for veterinary medicine, including the retention of currently approved drugs and future approvals of new drugs, is a critical component for ensuring a safe food supply and is essential to the improvement of animal health and welfare.

Compared with human medicine, fewer treatments are available for veterinary use, therapeutic agents can be more difficult to develop, and regulations for veterinary drug approvals are more stringent. Given the number of food animal species, in addition to the diversity of disease conditions that affect animals, a relative scarcity of labeled indications accompanying Food and Drug Administration (FDA) approved drugs exists. Though the FDA, the American Veterinary Medical Association (AVMA), and others have made, and continue to make, substantial strides in enhancing drug availability while still protecting human health, including legislative initiatives (such as the Minor Use and Minor Species Act), the number of FDA approved drugs are inadequate to meet veterinary medical needs, placing animal health and welfare and, potentially, human health at high risk. This really underscores the need and purpose of the Animal Medicinal Drug Use Clarification Act: to give veterinarians the authority to use drugs in an extra-label manner to prevent animal death and suffering. This also emphasizes only one of the many differences in veterinary

The AVMA works actively to mitigate the development of antimicrobial resistance related to the use of antimicrobials in food animals.

The continued availability of safe, effective antimicrobials for veterinary medicine is essential to the improvement of animal health and welfare……..

…….. and it is a critical component for ensuring a safe food supply.

medicine and human medicine, and therefore truly exemplifies a need for a better understanding of all professions engaged in One Health.

Since 1998, the AVMA has actively worked to mitigate the development of antimicrobial resistance related to the use of antimicrobials in food animals. The AVMA Guidelines for the Judicious Therapeutic Use of Antimicrobials were developed to safeguard the public's health by providing specific recommendations for responsible and prudent therapeutic use of antimicrobials. With support and input from the Centers for Disease Control (CDC), Infectious Diseases Society of America (IDSA), the FDA, and the United States Department of Agriculture (USDA), the guidelines were developed in collaboration with our species specific allied veterinary organizations. These guidelines were based on carefully reviewed, scientifically sound research, and we believe that our members conscientiously adhere to the principles of judicious therapeutic use of antimicrobials to ensure the protection of human health as well as animal health and welfare.

We have actively encouraged and assisted our species specific allied veterinary organizations to use the AVMA general principles as a template to develop more detailed guidelines appropriate to each species, disease and type of client. The AVMA also worked with these groups to develop and deliver a continuing education program to raise awareness within the profession and to encourage use of the principles. Fundamentally, the guidelines encourage scientifically based therapeutic practices, the use of antimicrobials only when needed, and compliance with all existing regulatory requirements when antimicrobials are used.

Veterinarians also strongly encourage a veterinarian-client-patient relationship (VCPR) and veterinary consultation when implementing any treatment regimen. Dispensing or prescribing a prescription product (including antimicrobials) requires a VCPR. The VCPR is the basis for interaction among veterinarians, their clients, and their patients. The veterinarian must have sufficient knowledge of the animal(s) to initiate at least a general or preliminary diagnosis of the medical condition of the animal(s). This means that the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal(s) by virtue of an examination of the animal(s), or by medically appropriate and timely visits to the premises where the animal(s) are kept.

Veterinarians making treatment decisions must use sound clinical judgment and current medical information and must be in compliance with federal, state, and local laws and regulations. Veterinarians must also include consideration of judicious use principles, food safety and public health, and producer education as a part of the treatment plan. After considerations have been made for animal, human, and the environmental health impact, veterinary authorization is required prior to dispensing the prescription product.

The American Veterinary Medical Association supports the ongoing scientific efforts of monitoring and surveillance of foodborne disease and resistant foodborne pathogens and…

….. is committed to ensuring a safe and healthy abundant food supply.

Veterinarians must balance the need for animal health and welfare with the need of human health, and also consider environmental impact. We are supportive of measures to mitigate risks to human health and our environment. In the development of risk management options, we have repeatedly emphasized the importance of the application of the One Health concept, urged that risks be evaluated in terms of risks to humans, animals, and the environment, and encouraged risk managers to specifically look at the relationships between humans and animals. While some measures can appear to reduce risks in humans, they may be increasing risks to animals and thereby also increase risks to humans through environmental impact, the food supply, or any of the many interactions in between.

The AVMA supports the ongoing scientific efforts of monitoring and surveillance of foodborne disease and resistant foodborne pathogens; education; development of new antimicrobials, biologics, and other treatment options; and other research to better define the challenges presented by animal agriculture. Increased data collection and surveillance of diseases, as well as continued veterinary input (including the appropriate use of pre- and post-harvest interventions, and compliance with judicious use guidelines for veterinarians and producers), may be sufficient to protect human health against the current small risks without compromising the health of food animals.

The American Veterinary Medical Association also supports adequate funding for all efforts to improve animal health and food safety, including efforts to combat antimicrobial resistance. The association is committed to working in concert with the CDC, FDA, and the USDA to provide consumers—not only in the United States, but all over the world—with the safest food possible. The judicious use of antimicrobials is only one of the essential components of the process that enables animal agriculture to meet that demand. Other components include veterinary care, good management practices, biosecurity, proper nutrition, and good husbandry.

The AVMA also shares the concerns of the human medical community, the public health community, governmental agencies, and the public regarding the potential problem of resistant foodborne pathogens developing in animals and then being transferred to humans. The use of drugs in animals is fundamental to animal health and well-being. Antimicrobials are needed for the relief of pain and suffering in animals. For food animals, drugs also contribute to the public's health by helping keep animals healthy and thereby keeping bacteria from entering the food supply. Pre-emptive bans of veterinary antimicrobials before science-based studies and risk-based evaluations are performed would be detrimental to animal and human health. Inappropriate reactions to a perceived problem could have unknown and unintended consequences that negatively affect animal health and welfare, and ultimately, could create other public health risks, such as increased foodborne illness.

The American Veterinary Medical Association is committed to ensuring a safe and healthy abundant food supply. Among other things, members of the

The veterinary profession is dedicated to improving animal health, safeguarding public health and food safety, and maintaining the long-term effectiveness of antimicrobials.

veterinary profession are dedicated to improving animal health, further safeguarding public health and food safety, and maintaining the long-term effectiveness of antimicrobials. The AVMA established a profession-wide initiative to create and implement judicious use guidelines for the therapeutic use of antimicrobials by veterinarians, and we launched an educational campaign to raise the awareness of the profession to the issue. Today, we continue to review and update those guidelines to reflect current practices and actively encourage compliance.

***Dr. Christine Hoang is* Assistant Director of the Scientific Activities Division, American Veterinary Medical Association.**

The Pew Commission's Report - *"Putting Meat on the Table: Industrial Farm Animal Production in America"*

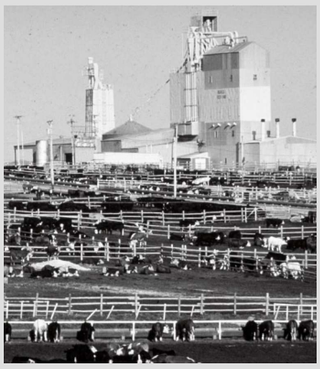
Mary E. Wilson, MD, FACP, FIDSA

The Pew Commission on Industrial Farm Animal Production (PCIFAP) was charged with proposing solutions to problems created by concentrated animal feeding operations.

Agriculture has undergone a profound transformation in the U.S. in recent decades. Most family farms have disappeared, and today a high percentage of food animals are raised in a production system that concentrates large numbers of animals of the same species that are genetically similar in relatively small areas. Animal waste, traditionally a valued fertilizer, accumulates in areas and in volumes that that may exceed the capacity of the land to absorb the waste.

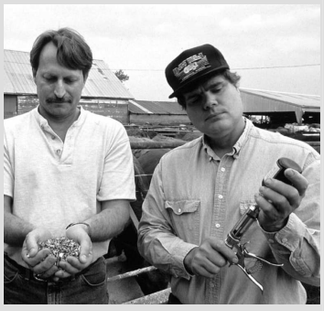
These changes in farming and food production have had multiple consequences – negative and positive - that affect biological, social, environmental, and economic systems. In 2005 the Pew Commission on Industrial Farm Animal Production (PCIFAP) was established through a grant to The Johns Hopkins Bloomberg School of Public Health from The Pew Charitable Trusts. It was charged with proposing solutions to problems created by concentrated animal feeding operations in main four areas: public health, the environment, animal welfare, and rural communities. After more than two years of meetings, the Commission, whose members brought a wide range of experiences and expertise to the discussion, released the final report (Putting Meat on the Table: Industrial Farm Animal Production in America) in April 2008 (entire report and executive summary are available at www.pcifap.org along with other related materials).

A Report of the Pew Commission on Industrial Farm Animal Production



The report recommended:

- *phasing out intensive confinement of food animals*
- *phasing out and then banning the nontherapeutic use of antimicrobials in food animal production*



- *implementing a program with a 48-hour track back of food animals at every stage of production*
- *developing standards and regulations to deal with farm waste and to prevent pollution*

- *Improving research in animal agriculture*

The report outlines six primary recommendations. These include:

1. Phase out and then ban the nontherapeutic use of antimicrobials in food animal production. In this context, nontherapeutic use is defined as use of antimicrobials in the absence of clinical disease or documented disease exposure. In concentrated animal feeding operations, antibiotics are often administered in low doses (e.g., through water or feed) to the entire flock or herd for growth promotion. Because many antibiotics that are used in food animal production are the same or in the same classes as those used to treat human disease, widespread use of these drugs in animals (and in humans) may contribute to the development of resistance in disease-causing organisms. Resistant bacteria or resistance genes can be transferred from animals to humans through multiple routes, directly or indirectly, e.g., through food, contaminated produce, and other means [Silbergeld]. The Commission also recommended a ban on any new approval of antimicrobials for nontherapeutic uses in food animals and a review of those previously approved.

2. Improve the monitoring and tracking of disease in food animals by the implementation of a program with a 48-hour track back of food animals at every stage of production. The tracking system would follow animals from birth to consumption, a critical capacity in the event of disease outbreak.

3. Improve the regulations that provide oversight for industrial farm animal production. This would address the zoning and siting of IFAP taking into account the climate, topography, and population density of a proposed site. New laws and regulations are also needed to develop standards for dealing with farm waste to prevent pollution and to protect the local environment and health of humans who live near these production facilities.

4. Phase out intensive confinement of food animals. These systems, which developed for economic reasons, restrict natural movement and normal behaviors of animals, and include such practices as swine gestation crates and cages for chickens.

5. Increase competition in the livestock market. Family farms have disappeared as livestock production and agricultural practices have become increasingly consolidated as a major industry – and even giant multinational agricultural companies. The quality of life in rural communities has been profoundly altered by this shift.

6. Improve research in animal agriculture. More public research dollars should be available to fund research on the impact of IFAP on public health and the environment. Today much of the research, including that done at universities, is funded by the animal agriculture industry.

The industrial farm animal production system developed at a time of cheap fossil fuel energy, a relatively stable climate, and abundant water, but resources are shrinking. The current system of production of food animals is not

sustainable; adverse consequences affect the health of humans, animals, and the environment. This report proposes ways to address these problems. In an elegant concluding essay Commissioner, Fred Kirschenmann, PhD, a Fellow at the Leopold Center for Sustainable Agriculture and a North Dakota rancher, makes a strong case for a transition from monoculture confinement operations to more biologically diverse systems.

Photos courtesy of Pew Commission

References

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Dr. Mary Wilson is Associate Professor of Global Health and Population at the Harvard School of Public Health and Associate Clinical Professor of Medicine at Harvard Medical School.

Salmonella and Reptiles

Diane King RN, MSPH and Ginger Stanley BHS

For many, reptiles and amphibians are considered to be the perfect pet……

For many, reptiles and amphibians are considered to be the perfect pet: non-allergic, quiet, and don't need walking. For some, their very exoticness is a draw. These are only some of the reasons for the apparent increasing popularity of reptiles and amphibians as pets. It is estimated that the number of households with reptiles as pets has doubled in the ten years from 1996 to 2006, going from 2.4 million households to 4.8 million.(1) But they can come with something your more typical species of pets are less likely to have; they can be carriers of *Salmonella.*

……but these exotic pets can be carriers of Salmonella.

Salmonellosis in people is a bacterial disease commonly manifested by acute enterocolits, with sudden onset of headache, abdominal pain, diarrhea, nausea and sometimes vomiting. Dehydration, especially among infants or in the elderly, may be severe. Fever is almost always present. Anorexia and diarrhea often persist for several days. Infection may begin as acute enterocolitis and develop into septicemia or focal infection. Deaths are uncommon, except in the very young, the very old, the debilitated and the immunosuppressed. Morbidity and the costs of salmonellosis may be high. (2)

The association between reptiles and *Salmonella* has been known for decades. The Food and Drug Administration (FDA) has banned the sale of turtles with a shell length < 4 inches since 1975 (21CFR1240.62). There have been numerous recommendations and guidelines written to inform pet owners of the risks of contracting *Salmonella*, steps to prevent transmission, and signs and symptoms of the disease. Unfortunately there is no way to ensure your pet is not a carrier or won't become one during its lifetime. There is no guaranteed long term treatment for the animals. They do not exhibit signs or symptoms of illness; however the organism is often shed intermittently in the feces of these animals.

The FDA has banned the sale of turtles with a shell length < 4 inches since 1975 (21CFR1240.62)..

Courtesy CDC/James Gathany

Always wash your hands thoroughly with soap and water after handling reptiles and amphibians or their cages.

***Salmonella* culture on Xylose Lyseine agar**
Courtesy CDC

According to the CDC in 2004, *Salmonella* caused an estimated 1.4 million human infections per year resulting in 15,000 hospitalizations and 400 deaths. A study conducted in the years 1996-1997 attributed 6% of all infections and 11% of infections among persons aged <21 years to contact with reptiles and amphibians. The table identifies the current recommendations for prevention of transmission of *Salmonella* from reptiles and amphibians to humans.(3)

Recommendations for preventing transmission of *Salmonella* from reptiles and amphibians to humans

- Pet-store owners, health-care providers, and veterinarians should provide information to owners and potential purchasers of reptiles and amphibians about the risks for and prevention of salmonellosis from these pets.
- Persons at increased risk for infection or serious complications from salmonellosis (e.g., children aged <5 years and immunocompromised persons) should avoid contact with reptiles and amphibians and any items that have been in contact with reptiles and amphibians.
- Reptiles and amphibians should be kept out of households that include children aged <5 years or immunocompromised persons. A family expecting a child should remove any pet reptile or amphibian from the home before the infant arrives.
- Reptiles and amphibians should not be allowed in child-care centers.
- Persons always should wash their hands thoroughly with soap and water after handling reptiles and amphibians or their cages.
- Reptiles and amphibians should not be allowed to roam freely throughout a home or living area.
- Pet reptiles and amphibians should be kept out of kitchens and other food-preparation areas. Kitchen sinks should not be used to bathe reptiles and amphibians or to wash their dishes, cages, or aquariums. If bathtubs are used for these purposes, they should be cleaned thoroughly and disinfected with bleach.
- Reptiles and amphibians in public settings (e.g., zoos and exhibits) should be kept from direct or indirect contact with patrons except in designated animal-contact areas equipped with adequate hand-washing facilities. Food and drink should not be allowed in animal-contact areas.

SOURCE: Mermin J, Hutwagner L, Vugia, D, et al. Reptiles, amphibians, and human *Salmonella* infection: a population-based, case-control study. Clin Infect Dis 2004;38 (Suppl 3):S253-61.

In a two week period during 2008, the Palm Beach County Health Department investigated 3 cases of salmonellosis, all of which were linked to reptile exposure in the home.

The first case was a 16 month old child. Her onset of illness was 9/15/2008 when she developed a fever of 105°F. *Salmonella* was cultured from a urine specimen at her physician's office. The family had a pet turtle in the home at the time of the child's illness, but removed it after being counseled by their physician.

Turtles were the reptile most frequently identified as being in the home of Salmonella cases.

Physicians, veterinarians and public health professionals need to take a One Health approach and work together to educate parents, schools and pet owners about the risk of reptile associated salmonellosis.

The second case, a 5 year old boy, developed abdominal pain and diarrhea on 9/25/08. He was seen that day by his physician. A stool culture was obtained and found to be positive for *Salmonella* serogroup B. This family also had a pet turtle at the time of the child's illness but removed it after being counseled by the family physician.

The third reptile associated salmonellosis case was an 11 week old infant who developed diarrhea and a fever on 9/26/08. He was admitted to a hospital where *Salmonella* was identified from a blood culture. He was treated with several antibiotics. At the time of his illness the family had an iguana in the house as a pet. The iguana was removed after discussion with hospital staff.

None of these children attended day care or had exposure to any individuals with known GI illness. The families denied eating in any restaurants or being exposed to raw or undercooked food or poultry during the incubation periods.

A review of the 275 cases of salmonellosis reported to the Palm Beach County Health Department for the first 10 months of 2008 found a total of 150 cases that were in children aged 7 years or less. Exposure risks were identified in 135 of the cases. Twelve cases were unable to be contacted, and 3 supplied incomplete information. Of the 135 remaining cases, 18 (13.3%) were identified as being exposed to a potential disease carrying reptile. Turtles were the reptile most frequently identified as being in the home.

The National Association of State Public Health Veterinarians and the Council of State and Territorial Epidemiologists recommended that state and local agencies adopt regulations to prohibit the sale or gift of reptiles without written point-of-sale education to consumers about the risks of and prevention of reptile-associated Salmonellosis in 1999.(4) In 2003 the CDC found only 9 states requiring such information for turtles and/or reptiles.(5) Florida was not one of those states.

It is apparent that animal exposure will continue to be a risk factor for developing salmonellosis. Renewed attempts need to be made by those caring for children and pets to ensure that the message of precautions is getting out to individuals and families considering reptiles and amphibians as pets.

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Veterinarians Need to be Proactive in Dialogue with their Medical Colleagues

Jim Edwards, BVSc, MRCVS, Dipl.Bus.Studs

We need to learn from past experiences and always try to do better in the future. One of the best recent examples is melamine and the problem it caused in pets over the last 18 months. Many reports have been published on ProMED-mail (www.promedmail.org). Did we alert the medical profession? Were human health agencies monitoring reports from the veterinary sector?

It is important to be cognizant of the interactions of animal and human health and welfare, food safety and food security, and the environment.

It is important to be cognizant of the interactions of animal and human health and welfare, food safety and food security – not forgetting the environment where all these interactions occur. The pressure is coming to bear on us to meet the growth in demand from the rapidly expanding human population, and from our finite resources of land, water and air. We must be careful to preserve our environmental resources to avoid the potential impact of degradation and climatic changes attributable to human activities.

We must also recognize and deal with the current spectrum of problems. The initiative to focus on rabies control is a significant development (www.worldrabiesday.org). The 55,000 human deaths each year are preventable. Success is dependent on the joint efforts of the veterinary and medical professions around the world. We need to work together to apply our skills and expertise everywhere it is required.

To succeed, we need to break down the communication barriers across borders and between sectors; encourage open communication and share information on a timely basis.

Every one of us must remain aware of the risks and question of new problems, even if they seem out of context and are unexpected. Every one of us needs to be prepared to “blow the whistle” with confidence, rather than “drop the ball” and fail to alert veterinary medical and medical colleagues to the appearance of new disease and/or food safety risks.

The future we want must involve talking to each other and working together to control and prevent the risks to food security, food safety and a myriad of public health and individual health care issues in order to enhance our individual and collective health and welfare…globally. After all, about 60% of all human pathogens are zoonotic, nearly 75% of emerging infectious diseases affecting humans are of animal origin, and 80% of agents that can be used for bioterrorism are pathogens of animal origin (Source: Dr Bernard Vallat, OIE Director General, at the 2008 World Veterinary Congress).

Courtesy WRD and CDC

Key to all this is communication. To succeed, we need to break down the communication barriers across borders and between sectors; encourage open communication and share information on a timely basis.

Having been actively engaged in maintaining several international websites and other aspects of communication, I know the One Health movement has been

wise (and it remains essential) to institute and encourage:

- the One Health Initiative website www.onehealthinitiative.com. This has been linked to several other important international websites such as: http://www.cabiblog.typepad.com/hand_picked/2008/10/the-first-europ.html, www.asianvet.org, www.izslt.it/izs, www.pandemicnetwork.com/promed.htm, www.TrackerNews.net and www.pitt.edu/~super1/assist/index.htm.
- endorsing organizations' websites to supply links to the One Health Initiative website.
- this edition of the One Health Newsletter which provides valuable exposure for public health and environmental health professionals.
- the summer 2008 edition of the One Health Newsletter: www.doh.state.fl.us/Environment/community/One_Health/OHNLSummer2008.pdf
- expanded use of op-ed forums by knowledgeable One Health advocates in newspapers in the U.S. and other countries.
- avid pursuit of adequate funding for development of a "National (U.S.) One Health Commission" as is currently underway via the outstanding American Veterinary Medical Association's One Health task force, and their deliberations directed toward implementation www.onehealthinitiative.com/taskForce.php. Such an entity, working in tandem with One Health organizations, leaders and governmental agencies in other nations will help greatly further the cause.

Each of us work's in our own role or roles, but together, our contribution is for the greater good, for "One Health".

Jim Edwards

World Veterinary Association
www.worldvet.org

We can be proud of our role and should be ready to share and work with our colleagues and our communities.

My conclusion is that as health professionals, we all participate in the global contribution of our professions. Each of us works in our own role or roles, but together, our contribution is for the greater good, for "One Health". We all contribute to One Health for the benefit of animals, humans and the environment. We can be proud of our role and should be ready to share and work with our colleagues and our communities.

Dr. Jim Edwards is the managing director of World Veterinary Consultants, an international network of consultants. In addition, he is editor and manager of the World Veterinary Association website www.worldvet.org and Newsletter.

One Health in Action !

Swine veterinarians and pork producers put One Health in practice on a daily basis.

Pork Production and One Health

Liz Wagstrom, DVM, MS, DACVPM

Food animal practitioners, through the very nature of their activities to safeguard animal health and protect public health through a safe food supply, are involved in one health on a daily basis. This article will provide an introduction to some of the initiatives and activities that swine veterinarians and pork producers are involved in under the one health umbrella.

Food animal practitioners, by the very nature of their activities to safeguard animal health and protect public health through a safe food supply, are involved in one health on a daily basis.

Modern pork production systems maximize the health of the pig through the practice of all-in-all-out production.

Courtesy Regis Lefebure (ARS)

In spite of the biosecurity and careful herd health practices swine influenza is not uncommon in the US swine herd.

While the pork production chain is more integrated than beef, there are still a myriad of production types and sizes of swine production systems. Because it is often more economical to transport pigs to the areas where feed grains are more abundant than to transport the feed grains to pigs, a large number of weaned pigs are moved from the southeast US to the Corn Belt states for finishing on a daily basis. This diversity of production types coupled with animal movements creates a complex set of circumstances to address in protecting public health while preserving animal health and welfare.

Modern pork production systems have been designed to maximize the health of the pig through a practice known as all-in-all-out production. This protocol involves weaning a cohort of pigs of similar age and immune status, ideally from one source herd, and keeping that group together through the entire growing period. After the group is assembled at weaning, no new animals are introduced into the group. The goal is to have only one group of pigs in an air space. That can be accomplished through having them in one room, one barn, or even one production site. When the group is marketed, the entire group is marketed, the facility washed, disinfected and dried prior to the introduction of any new animals into the group. Additional biosecurity practices, such as restricting access to the facility and requiring showers for people entering the facility, barn specific clothing and footwear, disinfection of supplies coming into the farm, and even heat treatment of transport facilities may be applied. Veterinarians, in their role in developing biosecurity schemes, may become involved in decisions on such things as pig flow, people flow and even supervision of truck washes!

The American Association of Swine Veterinarians (AASV) and the National Pork Board (the trade association for pork producers) work closely to deliver science based education to producers. The backbone of much of the National Pork Board outreach to producers is centered on the Pork Quality Assurance Plus (PQA Plus) program. PQA Plus is an education and assessment program that provides good production practices that help assure food safety and appropriate animal care. PQA Plus training is based on 10 Good Production Practices (GPPs) that address food safety and animal care. Food safety GPPs include practices designed to avoid violative drug residues, assure proper mixing and formulation of feed, enhance biosecurity, define responsible antibiotic use and aid in appropriate needle selection/physical hazard avoidance. Veterinarians certify that they have provided the education in food safety and animal care practices to producers.

PQA Plus also contains an assessment component. PQA Plus assessments are most commonly administered by veterinarians. A veterinarian or educator must undergo a training session prior to becoming a PQA Plus advisor. The assessment largely addresses animal care, but also has points on antimicrobial use. A subset of assessed sites will then be audited by a third party. PQA Plus certification is required by all major packers of the producers who supply them with pigs. This allows the packer to assure their customers that good production practices have been followed in the production of the pork that they are selling.

In spite of the biosecurity and herd health practices that are implemented swine influenza is not uncommon in the US swine herd. From the 1930s until the

Influenza testing is on-going in domestic swine herds.

A fact sheet – Influenza: Pigs, People and Public Health – is available at www.pork.org.


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PUBLIC HEALTH FACT SHEET

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INFLUENZA: Pigs, People and Public Health

Summary Swine influenza viruses were first isolated in the United States in 1930. Since that time, they have become an economically important cause of respiratory disease in pigs throughout the world, and a human public health risk. The clinical signs/symptoms of influenza in pigs and people are remarkably similar, with fever, lethargy, lack of appetite and coughing prominent in both species. Furthermore, influenza viruses can be directly transmitted from pigs to people as "zoonotic" disease agents, and vice versa, from people to pigs. These interspecies infections are most likely to occur when people are in close proximity to pigs, such as in swine production barns, livestock exhibits at fairs, and slaughterhouses. Finally, because of their unique susceptibility to infection with influenza viruses of both mammalian and avian species, pigs can serve as intermediates in the transmission of influenza viruses from birds to people. The birds of greatest concern are wild waterfowl, because these species provide an immense natural reservoir of influenza viruses. Replication of avian influenza viruses in pigs may allow them to adapt to and be able to efficiently infect mammals, and ultimately be transmitted to people. In addition, pigs can serve as hosts in which two (or more) influenza viruses can undergo "genetic reassortment." This is a process in which influenza viruses exchange genes during replication. The influenza viruses responsible for the worldwide 1957 and 1968 "pandemics" of human influenza were reassortant viruses with genes from both human and avian influenza viruses. Veterinarians can help pig producers design farms

Public and environmental health practitioners should consider the food animal practitioner as a valuable resource and potential partner.

late 1990s swine influenza in the US was stable, with H1N1 invariably being the swine serotype. Since then, the picture of swine influenza has become more variable. H1N1, H1N2, H3N2 and H3N1 are all serotypes found in US pork production. In addition, a triple reassortant (swine, avian and human genes) internal gene structure is observed in most US swine influenza virus isolates. There is also antigenic drift within these serotypes that can lead to clinical failure of swine influenza vaccination.

Many swine specialists routinely submit influenza cases to diagnostic laboratories for isolation and partial sequencing of the isolates. These sequences are then tracked to assess the degree of drift, and ascertain the likelihood that vaccine failure may occur. As drift is observed, it is not unusual for practitioners to have autogenous, strain specific, vaccines produced.


Courtesy USDA

Since much of this data is held by private practitioners in their own databases, national laboratories, such as NVSL, may not have access to the latest strains. That limits their ability to produce reagents that are effective at detecting the currently circulating swine influenza strains. USDA's Center for Veterinary Biologics has recently issued guidance to allow commercial vaccine companies to more quickly and easily change strains in commercial vaccines as strains change in the swine population. Again, because much of the data on new strains is held in private databases, updating of strains in commercial vaccines is delayed.

A federal swine surveillance project is under development. This project aims to identify currently circulating swine influenza strains and recognize drifts, or shifts, in circulating strains. Special attention will be paid to strains associated with an unusual clinical picture and/or strains in which compatible human illness is observed. Swine veterinarians will be pivotal in identifying appropriate swine cases as well as delivering education on the zoonotic aspects of influenza to swine producers. Veterinarians will also be involved in advising producers on management practices that will help to minimize the potential for interspecies transfer of influenza – either from pigs to people or from people to pigs. A fact sheet – Influenza: Pigs, People and Public Health – provides a background on swine influenza and management practices is available at www.pork.org.

The above described activities are just a small sample of the types of practices that swine veterinarians are involved with in the protection of public health, animal health and animal welfare. When public and environmental health practitioners deal with situations involving animal agriculture, they should consider the food animal practitioner as a valuable resource and potential partner.

Dr. Liz Wagstrom is Assistant Vice President of Science and Technology at the National Pork Board.

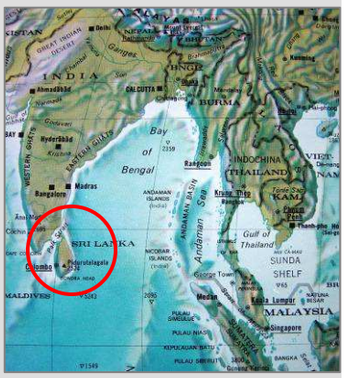
HPAI Threat a Blessing in Disguise

Ravi Bandara Dissanayake, BVSc, Attorney-at –law

One Health in Action !

The threat of HPAI has united veterinary and human medicine in Sri Lanka.

Major zoonotic disease outbreaks in the world have united two previously separated fields in Sri Lanka, veterinary medicine and human medicine, especially under the influence of avian influenza concerns. Being an island in the Indian Ocean strategically located near the southern tip of India, the country is placed in the low risk category for Highly Pathogenic Avian Influenza (HPAI). HPAI has never been reported in the country. However, Sri Lanka is well prepared to face any emergency situation with the support of both veterinary and medical departments.



The most probable source of introducing HPAI into Sri Lanka is by way of wild and migratory birds. Birds arrive via eastern and western flyway routes and settle in two main bird sanctuaries in the country until their return migration. In addition, wild birds and some aquatic birds flying in from affected countries may enter and contaminate the surface water of lakes or lagoons where backyard indigenous chickens may become infected. The other possible sources include importation of live poultry or poultry meat products and by-products, importation or smuggling of pet birds, and infection carried by International passengers and fomites.

Poultry production is the number one livestock industry in Sri Lanka and millions of people rely on it, directly and indirectly, for their livelihoods.

A well planned surveillance program has been going on in Sri Lanka for the detection of possible infection in migratory birds for the last couple of years. Import of aviary birds was temporarily banned in 2004 and still continues. The ban on the importation of day-old chicks and chicken feathers from HPAI free countries was lifted in 2007. Since poultry production is the number one livestock industry, more weight is placed on surveillance of imported chicks. All poultry and poultry products are allowed only after a proper risk analysis. A special counter is opened in the only international airport of the country to register passengers who have recently visited poultry farms.

Imports of Poultry in 2006

Item	Number
Grand parent - Broiler	30,973
Day-old chicks - Broiler	249,318
Day-old chicks - Layer	89,855

All day-old poultry consignments are placed under quarantine surveillance agreement and monitored by weekly reports sent by the importer. As a part of active surveillance, cloacal and serum samples are collected for screening for HPAI twice during the quarantine period. Illegal imports of poultry or poultry products including peacock feathers, duck eggs, and pigeons have also been detected in the past. In 2007, illegal imports from India, Japan, and Dubai were either destroyed or returned to the country of origin. Some of the imports were without veterinary health certificates.

WHO, FAO, and USAID are funding major programs in the country for HPAI theemergency preparedness. This, itself, shows that every country should be

free from HPAI in order to free the world. Emerging zoonotic diseases have caused a huge loss to many major livestock economies in the world.

Courtesy AP

In the past, Sri Lanka has been subjected to incursion by exotic diseases. Rinderpest and goat pox were two major diseases introduced to the country from neighboring India during 1987. However, both diseases were controlled successfully and the last case was reported in 1994 for Rinderpest and 1996 for Goat pox. *Brucella melitensis* was also detected in an imported stock of goats a few years back and not reported thereafter. Anthrax was last reported in Sri Lanka in 1969. But clinically confirmed cases occurred in 1991. SARS and BSE have never been reported.

Due to the current threat of emerging zoonoses, medical and veterinary medical departments have issued joint circulars giving guidelines on collection and transport of specimens. Infection control precautions for HPAI, transportation of patients, collection of human specimens, and procedures for sample collection and for transport of specimens have evolved.

Sri Lanka's physicians, veterinarians and have realized that working together is the best solution for early detection, early warning and control of zoonotic diseases outbreaks.

In addition, district coordinating committees have been formed including veterinary medical and medical staffs. Therefore, a close link is being developed between the two professions, which is a very good sign for a developing country like Sri Lanka. However, this link should be developed for all the zoonotic diseases including rabies (788 animal rabies cases in 2006, 531 cases in 2007) leptospirosis, and brucellosis. The world has now begun to realize that there is 'one world, one medicine and one health.' Joint surveillance activities, information sharing and communication are key to success in this endeavor.

Unlike SARS and BSE, HPAI emergency preparedness has been given priority because poultry production is the number one livestock industry in Sri Lanka and millions of people make their livelihoods from this industry directly and indirectly. It is also a big trade issue for the country. This clearly shows that not all diseases attract prompt and proper control and surveillance methods, but depend on how important the issue is to a particular country. The time has come to change this attitude and operate broader and advanced surveillance methods in collaboration with other sectors. Wildlife and abattoir surveillance needs to be enhanced. GIS has been introduced to the country and new software like TADinfo and a locally designed disease monitoring and surveillance system (DMSS-Funded by USAID) are now in operation with Arc GIS. More importantly we have identified the need to amend existing legislation to strengthen disease prevention and control.

The concept of 'one world, one medicine and one health' is key.

All these improvements happened because of HPAI, which opened the eyes of professionals who now realize that working together is the best solution for early detection, early warning and control of zoonotic diseases outbreaks.

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Dr. Ravi Bandara Dissanayake works at the Animal Health Division, Department of Animal Production & Health, Sri Lanka. He is the Editor of the Veterinary Epidemiological Bulletin Sri Lanka.

Gainesville Shelter Medicine Program Takes a Bite Out of Rabies

One Health in Action !

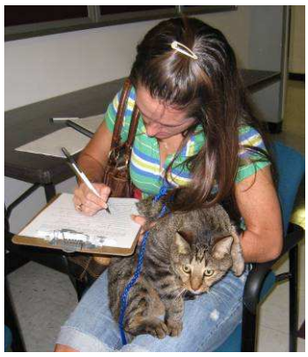
University of Florida's College of Veterinary Medicine provides free rabies vaccinations on second annual World Rabies Day

Gainesville pet owners turned out in droves to be sure their pets were protected against rabies during a free vaccination clinic at the University of Florida.

Julie Levy, DVM, PhD, DACVIM

Volunteers from the College of Veterinary Medicine at the University of Florida teamed up to provide free rabies vaccinations in celebration of the second annual World Rabies Day on September 28, 2008.

"Alachua County records suggest that only about one in four local pets is up to date on rabies vaccines," said Dr. Julie Levy, director of UF's Maddie's Shelter Medicine Program. "This extremely dangerous situation was highlighted in July when an unvaccinated pet cat developed rabies, putting its entire family and the staff of a Gainesville veterinary clinic in jeopardy. World Rabies Day provided the perfect opportunity to raise awareness of the very real threat posed by this completely preventable disease."



In less than four hours, a team of 36 veterinary students, eight veterinarians, and seven staff members provided free rabies vaccines for 78 cats, 59 dogs, and 3 ferrets. The clinic was organized by the new Maddie's Shelter Medicine Program and made possible by product donations from Merial, Bayer Animal Health, and Webster Veterinary.

"We cannot let our guard down with rabies," warns Levy. "Rabies is ever-present in Florida wildlife which can in turn expose our pets and family."

In 2007, 128 Florida animals were diagnosed with rabies, seven of which were in Alachua County.

Additional information is available online at www.UFShelterMedicine.com.

Dr. Julie Levy is the director of the University of Florida's Maddie's Shelter Medicine Program. The mission of the program is to enhance the health and welfare of homeless animals through education, innovation, and advancement of the life-saving goals of sheltering programs.

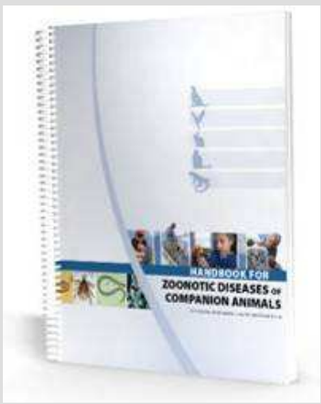
Handbook for Zoonotic Diseases of Companion Animals

One Health in Action !

Iowa State University's CFSPH develops 'Handbook for Zoonotic Diseases of Companion Animals'

Glenda Dvorak, DVM, MPH, DACVPM, James Roth, DVM, PhD and Anna Rovid Spickler, DVM, PhD

Pets are an important part of people's lives. As family members in over 60% of U.S. households, these animals provide great benefit, both psychological and physiological, to their owners. However, interactions with pets can also pose a risk for



The 'Handbook for Zoonotic Diseases of Companion Animals' emphasizes the importance of multi-disciplinary collaboration between the veterinary, human medical and public health professions in protecting and educating the public from the risk of emerging and zoonotic diseases.

'Select Zoonotic Diseases of Companion Animals' wall chart

zoonotic disease transmission, especially for young children, the elderly and immunocompromised individuals. Fortunately, with education and preventive measures, most zoonoses can be avoided, allowing for safe interactions between people and pets.

The Center for Food Security and Public Health, at Iowa State University College of Veterinary Medicine, with financial support from Bayer Animal Health, has developed the 'Handbook for Zoonotic Diseases of Companion Animals'. The Handbook was designed as a resource for human and animal health professionals to enhance their current knowledge of select zoonoses and to educate the general public (e.g., clients and staff) on the risks and prevention of zoonotic diseases.

The Handbook contains an introduction by Dr. Lonnie King, Acting Director of the National Center for Zoonotic, Vector-Borne and Enteric Diseases at the Centers for Disease Control and Prevention and seven chapters. Chapters 1 and 2 overview the importance of zoonoses and diseases that can result from animal bites and scratches. Chapter 3 addresses a veterinarian's (and other health professional's) legal liability related to zoonoses. Technical disease information on 50 zoonotic diseases of companion animals is contained in Chapter 4, which includes many commonly known zoonotic pathogens of companion animals (such as rabies and toxoplasmosis), as well as emerging diseases (such as Nipah and leptospirosis), and lesser known diseases with the potential for introduction into the U.S. (such as Rift Valley fever). These fact sheets address the etiology, epidemiology, clinical signs for humans and animals and prevention measures for each disease. Annotated images are found in Chapter 5. Chapters 6 and 7 contain one-page disease specific 'Fast Facts" and disease prevention educational materials designed as aids for raising awareness among the public (e.g., clients or patients)

The technical disease fact sheets, 'Fast Facts' and many of the handouts can be found on the CFSPH website under the Zoonoses heading. Ordering information for the book can be found at http://www.cfsph.iastate.edu/Zoonoses_Textbook/default.htm.

This handbook and educational materials emphasize the importance of multi-disciplinary collaboration between the veterinary, human medical and public health professions in protecting and educating the public from the risk of emerging and zoonotic diseases of companion animals.

A full-color 18" x 27" wall chart titled, *Select Zoonotic Diseases of Companion Animals*, is also available and contains an overview of the transmission routes, clinical signs and incubation periods of select diseases. Copies are available for purchase at www.cfsph.iastate.edu/Products/zoonosiswallchart.htm.

The Center for Food Security and Public Health (CFSPH) is based at Iowa State University College of Veterinary Medicine and was established in July 2002 with funding from the Centers for Disease Control and Prevention. The CFSPH works to increase awareness of emerging, exotic and zoonotic diseases for veterinary and human medical professionals and has distributed materials on bioterrorism, agroterrorism, and foreign animal diseases nationwide to a number of audiences.

Additional educational materials are available on-line at www.cfsph.iastate.edu.

Dr. Glenda Dvorak is the Assistant Director of the Center for Food Security and Public Health at Iowa State University College of Veterinary Medicine and an Adjunct Lecturer at the University of Iowa College of Public Health.

Dr. James Roth is a Distinguished Professor and Director of the Center for Food Security and Public Health at the Iowa State University College of Veterinary Medicine.

Dr. Anna Rovid Spickler is a Veterinary Specialist at the Center for Food Security and Public Health at Iowa State University College of Veterinary Medicine.

World AIDS Day at Auburn University

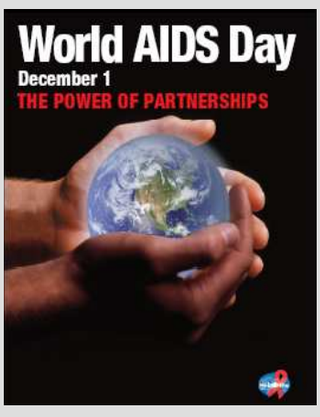
Kenneth E Nusbaum, DVM, PhD

One Health in Action !

Auburn University provides information on the care for pets of immunocompromised persons at World AIDS Day.

The 20th World AIDS Day also marked the first observance of World AIDS Day at Auburn University. The program was organized by Nick DePompa, AU CVM 2011, a native of Pembroke Pines, FL. Nick invited Dr. Caroline Shaffer of Tuskegee University School of Veterinary Medicine to present her program, "The Veterinarian's role in the AIDS crisis." Dr. Shaffer addressed the needs of Veterinary consultation for all immunosuppressed persons who enjoy the support of pets. As Dr. Shaffer repeatedly noted, the interaction of the human and veterinary medical communities has not been optimal during the 26 year history of the AIDS pandemic.

In addition to the presentation, representatives from the local AIDS outreach center offered information resources and a member of the Auburn faculty, Dr. Jennifer Spencer, also provided information on zoonoses.



Each of the 180 attendees received a packet containing two publications from PAWS (Pets are Wonderful Support (www.pawssf.org) and a reprint of "Caring for pets of immunocompromised persons, " Angulo, *et al*, www.avma.org., and an additional 400 information packets were distributed to students and faculty at Auburn, and to local veterinary practitioners and physicians.

The program was supported in part by the Banfield Charitable Trust, and by the AU CVM Committee on Diversity in Veterinary Medicine.

Dr. Kenneth E Nusbaum is a professor in the Department of Pathobiology, Auburn University, College of Veterinary Medicine and an advocate for student-oriented public health programs.

One Health in Action !

Technical consultation on avian influenza stresses importance of collaboration between animal and human health professionals

Technical Consultation on Avian Influenza Highlights the Importance of Collaboration between Animal and Human Health Professionals

Tara Anderson, DVM, MPH

In October 2008 the Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE), and the World Health Organization (WHO), in collaboration with the Istituto Zooprofilattico Sperimentale delle Venezie (IZSVe), held a joint technical consultation on avian influenza in Verona, Italy. The meeting, which brought together a diverse group of about 80 scientists from both the animal and human health sectors, represented a milestone event in collaboration at the human-animal interface. Consultation participants hailed from five continents and included influenza virologists, molecular biologists, and epidemiologists; scientists involved in field surveillance for avian and human influenza; and technical staff working on scientific aspects of avian influenza assessment and control from FAO, OIE, and WHO headquarters as well as H5N1- affected regions and countries.

About 80 scientists participated in the consultation, which was held on October 7-9, 2008 at the Palazzo Verita Poeta in Verona, Italy.

[Left to right] **Drs. Gaetana Ferri** (Italian MoH), **Ilaria Capua** (IZSVe), **Bernard Vallat** (OIE), **Joseph Domenech** (FAO), **Isabel Minguez** (EC), and **Keiji Fukuda** (WHO) **welcomed participants, and expressed their hope that the consultation would result in greater collaboration between animal and public health.**

The consultation focused not only on avian influenza H5N1, but also on risks from other animal influenza viruses and other zoonotic diseases at the human-animal interface. Participants noted that the ongoing H5N1 HPAI crisis has presented both challenges and opportunities to the global community, and that the successful strategies and lessons learned from avian influenza should serve as the foundation of sustainable disease prevention and control programs that address avian influenza as well as other zoonotic, emerging, and re-emerging infectious diseases.

The consultation objectives, agenda, list of participants, PowerPoint presentations, and an initial two page document listing conclusions, research gaps,

and proposed actions are available at http://www.fao.org/avianflu/en/conferences/verona_2008.html. Presentation abstracts and the complete consultation summary report will be published in Influenza and Other Respiratory Viruses, Spring 2009.

Dr. Tara Anderson is currently pursuing her PhD at the University of Florida, focusing on the epidemiology of canine influenza virus. She serves on the editorial board of the One Health Newsletter, and was the rapporteur at this joint technical consultation in Verona.

Recent One Health News and Publications:

Contributing to One World, One Health – A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface A Consultation document produced by OIE, WHO, Unicef, FAO, The World Bank and the UN System Influenza Coordination. October 14, 2008
http://www.oie.int/downld/AVIAN%20INFLUENZA/OWOH/OWOH_14Oct08.pdf

Zoonoses and Public Health Volume 55 Issue 8-10 (October 2008)

* **All Creatures Great and Minute: A Public Policy Primer for Companion Animal Zoonoses (p 385-401)** J. K. Reaser, E. E. Clark Jr, N. M. Meyers
* **Meeting Report: Panel on the Potential Utility and Strategies for Design and Implementation of a National Companion Animal Infectious Disease Surveillance System (p 378-384)** A. B. Stone, J. A. Hautala
* **Discussion of the Compendium of Veterinary Standard Precautions: Preventing Zoonotic Disease Transmission in Veterinary Personnel (p 526-528)** B. Elchos, J. Scheftel

For other One Health publications visit the One Health Initiative website.

http://www.onehealthinitiative.com/publications.php

Educational Opportunities:

WKU Offering Exam Review Course for ACVPM

Western Kentucky University is partnering with WKU Department of Public Health, the Center for Food Security and Public Health (CFSPH) at Iowa State University and the U.S. Army Veterinary Corps. to offer a review course for the American College of Veterinary Preventive Medicine Board Certification Exam.

The **online course** will be held Jan. 12-June 22. For information and to request a registration form, call (270) 745-1912, e-mail cont.ed@wku.edu, or visit the Continuing Education website at www.wku.edu/ce.

One Health Newsletter

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One Health Newsletter

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Supercourse is a global repository of lectures on public health and prevention targeting educators across the world. Supercourse has a network of over 55,000 scientists in 174 countries who are sharing for free a library of 3504 lectures in 26 languages. http://www.pitt.edu/~super1/index.htm

Coming Events:

- **The International Meeting on Emerging Diseases and Surveillance (IMED 2009)**

  Vienna, Austria

  February 13-16, 2009, Hotel Hilton

  http://imed.isid.org/

- **The James Steele Conference on Diseases in Nature Transmissible to Man (DIN)**

  Fort Worth, Texas

  June 2- 5, 2009, Hilton Fort Worth

  http://diseasesinnature.googlepages.com/din2009

AVMA 145th Annual Convention

Seattle, WA

July 11 - 14, 2009

Washington State Convention & Trade Center,

http://avmaconvention.org/default.asp?alt=URL2&body=/_event1/default_content.asp&nav=/leftnav/navHome.asp