

# News & Views



## ACVPM Diplomate Dr. Pappaioanou Resigns from AAVMC

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Please forward any news or items that you would like for us to consider publishing in the next Newsletter!

Next issue deadline:

11 May 2012

Dr. Marguerite Pappaioanou announced Oct. 7 that she is resigning as the executive director of the Association of American Veterinary Medical Colleges, effective Oct. 31. She will go to work for DAI (Developmental Alternatives Inc.) starting in early 2012, where she will pursue initiatives in global development, public health, and one health.



The AAVMC coordinates the affairs of all 28 U.S. and five Canadian veterinary medical colleges, nine U.S. departments of veterinary science, eight U.S. departments of comparative medicine, eight international veterinary schools, three veterinary medical education organizations, and four affiliate international veterinary schools. The association represents more than 4,000 faculty, 5,000 staff, 10,000 veterinary students, and 3,000 graduate students at these institutions.

Dr. Pappaioanou began her position at the association Nov. 1, 2007. She oversaw the unveiling of the AAVMC's strategic plan in March 2009. The plan—the first in the association's 45-year history—lists the AAVMC's vision,

mission, and values, in addition to the six goals that will determine the association's priorities and allocation of resources until 2014.

Also during her tenure, Dr. Pappaioanou lobbied consistently on behalf of the AAVMC for

passage of the Veterinary Public Health Workforce and Education Act, which would establish a competitive, multimillion-dollar grant program for veterinary colleges and other institutions offering graduate training in veterinary public health.

Prior to joining the AAVMC, Dr. Pappaioanou held a joint appointment as professor of infectious disease epidemiology in the School of Public Health and College of Veterinary Medicine at the University of Minnesota. She has also held numerous positions at the Centers for Disease Control and Prevention, including acting deputy director in the Office of Global Health in 2004, and associate director for science and policy from 1999-2004.

*By Malinda Larkin, JAVMA  
(edited for content)*

## President's Letter.....

*Dr. Roger Krogwold*



Greetings from Dublin, Ohio:

The Credentials Committee, led by Dr. Jeff Bender, has been busy reviewing applications for the certification examination. At this point, we have about 42

new applicants approved to sit for our June examination plus many to retake the examination, but this number always changes at the last minute due to a variety of reasons. The good news is that the Credentials Committee has found that the new application, which had major changes last summer, made the application more relevant to our core competency areas. They also report that the changes to the Bylaws made the credentialing decision less subjective. This is good news, and we appreciate everyone's work, especially the Credentials Committee, toward improving the certification process.

The College recently participated as a co-sponsor at "A Day at CDC for Veterinary Medical Students." This is an every other year event organized by the CDC to introduce veterinary students to career choices in public health and epidemiology, and the Executive Board decided this would be a worthwhile venue to reach out to future candidates for our certification examination. Thank you to Dr. Renee Funk, who suggested this event as an advertising opportunity for the College, and Dr. Sherry Burrer, who worked at our College's booth to answer questions concerning the College. Dr. Burrer reported that many of the 320 veterinary students and faculty in attendance visited the ACVPM booth. There was also a "Meet the Experts Panel" that added to our exposure with students interested in public health.

Dr. Patty Scharko, Chair of the Membership and Outreach Committee, has been working on purchase ideas and sources for a new display for the College. Our old display isn't keeping up with the times and needs to be replaced. The plan is to have the new display and new pictures in place for the

AVMA convention in August. You may soon be seeing a request for pictures of Diplomates involved in their jobs and activities related to veterinary preventive medicine that we can use for the display.

Both of these activities – participation in the "A Day at CDC for Veterinary Medical Students" and upgrading our display – are important in publicizing our College and reaching out to potential candidates for certification. Since much of what we do in our profession is in the forefront of veterinary medicine and public health, the ACVPM is in a prime position to attract applicants for certification. We need to continue to take advantage of these opportunities.

Like other Veterinary Specialty Organizations, we have been working on a plan for recertification as required by the American Board of Veterinary Specialties. This will be a big change for our membership and will require a ballot to change the Bylaws. Our ad hoc recertification committee, led by Dr. Peggy Carter, has completed a draft recertification SOP and Bylaws change. These draft documents will be posted on the ACVPM website for review and comment by all of our membership. Please review them and come to the general membership meeting at the AVMA Convention in San Diego to share your opinions on our developing plan for recertification. A few highlights of the plan are: Recertification will involve all active Diplomates; there will be multiple avenues for recertification; and implementation is planned to begin in 2016. I want to thank Dr. Carter's committee for all their work in drafting the SOP and Bylaws revisions.

Finally, and of vital importance to the College, are the upcoming elections. The following slate of candidates are running for positions on our Executive Board: President-elect, Dr. Scott Brooks; Secretary-Treasurer, Dr. Sherry Burrer; and Councilor, Dr. Marianne Ash. All of these candidates will be excellent stewards of our College, and I heartily endorse their election! We are very lucky to have such qualified individuals who are willing to carry on the important work of our specialty organization.

*Roger Krogwold, ACVPM President*



## Upcoming Elections for Executive Board Positions!

President-elect  
Secretary-Treasurer  
Councilor

Keep an eye out for an email asking for your votes!

Additional details in Dr. Krogwold's letter on page 2

## ACVPM Diplomates in Action!



Dr. **Philip H. Kass** cited in 1 December 2011 JAVMA article titled *Clinical signs and histologic findings in dogs with odontogenic cysts: 41 cases (1995-2010)*.

**Conclusions and Clinical Relevance:** Results suggested that a variety of odontogenic cysts can occur in dogs. In addition, cysts that resembled odontogenic keratocysts reported in people were identified. We (including four co-authors) propose the term canine odontogenic parakeratinized cyst for this condition.

Drs. **Bruce R. Hoar** and **Philip H. Kass** cited in 15 December 2011 JAVMA article titled *Effect of a nutritional reconditioning program for thin dairy cattle on body weight, carcass quality, and fecal pathogen shedding*.



**Conclusions and Clinical Relevance:** Feeding market dairy cows improved body condition and carcass quality. Cows seropositive for antibodies against bovine leukemia virus that have signs of lymphoma and lame cows might be poor candidates for reconditioning.

Colonel **John L. Poppe** was promoted to brigadier general and chief of the U.S. Army Veterinary Corps Dec. 9, 2011.

Brig. Gen. Poppe is the 25th chief of the Army Veterinary Corps, which comprises more than 700 veterinarians, 80 warrant officers, and 1,800 enlisted soldiers on active or reserve duty. As head of the Veterinary Corps, Brig. Gen. Poppe is also the Army assistant surgeon general for force projection.



President Obama nominated the then-colonel for promotion and assignment as corps chief,

which the Senate approved Nov. 10. At the time, Dr. Poppe had been serving as chief of the Department of Veterinary Science at the Army Medical Department Center and School at Fort Sam Houston in Texas.

Brig. Gen. Poppe received a DVM degree from Washington State University in 1986 and is a diplomate of the American College of Veterinary Preventive Medicine. He holds master's degrees in public health-epidemiology and in national security and strategic studies from Tulane University and the Naval War College, respectively.

Decades of military service have brought Brig. Gen. Poppe numerous awards and decorations, such as the Meritorious Service Medal, two Army Commendation Medals, and the Army Surgeon General's "A" Proficiency Designator for Veterinary Preventive Medicine.

JAVMA

## Meeting Global Food Demand

Improved agricultural technology is needed to decrease world hunger, reduce conflict, and give consumers choices, according to Rob Aukerman, president of U.S. operations for Elanco Animal Health.

Jo Luck, president of Heifer International and one of two 2010 World

Food Prize laureates, said that through inspiration and education, people can develop the plans needed to help themselves and their communities produce ample food and improve their lives.

During the 44th Annual Conference of the American Association of Bovine Practitioners, Aukerman and Luck were among presenters who described the harms of global hunger, the effects of the rising demand for animal products in developing nations, and the roles veterinarians can take in meeting that demand. The meeting was Sept. 22-24 in St. Louis. About 2,100 veterinarians, students, and other attendees participated in the meeting.

Aukerman thinks individuals involved in food production need to explain the importance of technology improvements in food production that do not require increases in land or material inputs. He thinks that agricultural industries might also find that they have allies among environmental activists because of the shared goal of producing food without increased resource usage.

Luck said veterinarians can improve the lives of people in developing nations by sharing their expertise, which can help those with few resources learn from the experiences of food producers elsewhere



*Photo by Joyce M. Turk*

in the world. She encouraged the veterinarians in attendance to learn about people's hopes and aspirations, inspire them to set agendas, and let them lead and own their projects.

Luck recounted work that helped some Masai farmers establish and grow their dairy

cow herds as well as a project in Honduras that developed goat herds while helping turn barren ground into plant-covered terraces. She said that she encountered a young woman while providing aid in Uganda and encouraged her to have dreams and set goals. With livestock aid and encouragement, the woman eventually earned a doctorate in the U.S. and worked for the United Nations.

Jo Luck, president of Heifer International, encourages veterinarians to aid people in developing countries through encouragement and advice yet to let those people set their agendas and own their work.

"You never know what you might say that could change a life," Luck said. She said that, with some help from veterinarians, farmers in developing countries can be great entrepreneurs.

Heifer International, with about \$47 million from the Bill and Melinda Gates Foundation, is working in sub-Saharan Africa on a dairy project to empower farmers to increase production beyond subsistence farming. One or two hectares of land can allow someone to rotate crops, raise animals, make a living, and help others, Luck said.

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## Meeting Global Food Demand (cont.)

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Joyce Turk, senior livestock adviser for the U.S. Agency for International Development's Bureau of Food Security, said improved living conditions and population growth are driving the increased demand in developing countries for food from animals. While people in developing countries consume more meat overall than those in developed countries, per capita consumption remains higher in developed countries.



Jo Luck, president of Heifer International

Malnutrition kills between 3.5 million and 5.5 million children younger than age 5 annually, Turk said, citing figures from the World Bank. She noted that one West African country, Mali, exports several hundred thousand cattle, sheep, and goats to neighboring countries annually, yet malnutrition affects between 30 and 39 percent of children younger than age 5 in that country. She said in an interview that the exports may be connected with lack of information about the critical need for animal-source foods in the diets of children, particularly for those 2 to 12 years old.

Through 2020, demand for milk is expected to rise 1.8 percent annually in developing countries and 0.2 percent in developed ones, she said. Meat demand is expected to rise 1.7 percent annually in developing countries and 0.5 percent in developed ones.

Although global demand for animal products is increasing, the numbers of U.S. cattle herds and cattle owners will likely decrease until product prices rise enough to support those still in business, according to Dr. David P. Anderson, a professor and extension economist in the Department of Agricul-

tural Economics at Texas A&M University. He indicated that skyrocketing animal feed costs, speculative investment in agricultural commodities, and rising incomes elsewhere in the world are among the factors that could increase the prices of groceries, and suggested that substantial increases in food prices could decrease food security in the U.S.

The U.S. beef cattle population has dropped 12 percent since 2007, even though beef exports have been growing, according to information released in late October by Purdue University. Beef prices have risen from \$92 per hundredweight in 2007 to \$113 per hundredweight in 2011, and prices are expected to top \$120 in 2012, according to university figures. Christopher A. Hurt, PhD, an agricultural economist at Purdue, said in a university statement that drought and high feed prices were connected with the reduced population of U.S. cattle.

Turk said in her presentation that meat and dairy products not only provide immediate nourishment but also aid physical and cognitive development. The World Health Organization estimates that about 22 percent of preschool-age children in West Africa are underweight compared with about 1.5 percent in developed nations.

In an interview, Turk encouraged veterinarians to become aware of the importance of animal-source foods in children's diets, tell others when possible, and recognize that children within the U.S. suffer from malnutrition and micronutrient deficiencies. Imparting that knowledge serves communities, she said.

*By Greg Cima, JAVMA*

## AAHA Update Guidelines on Canine Vaccination

The 2011 guidelines appeared in the September edition of the Journal of the American Animal Hospital Association and also are available at [www.aahanet.org/Library/CanineVaccine.aspx](http://www.aahanet.org/Library/CanineVaccine.aspx).

## AVMA Backs National List of Reportable Animal Diseases

### Production animals

On recommendation of the AVMA Animal Agriculture Liaison Committee, the board approved a new policy supporting development of a national list of reportable animal diseases.

State and federal regulations vary in their requirements for reporting various animal diseases, and the Department of Agriculture's Animal and Plant Health Inspection Service is developing a standardized national list of reportable animal diseases as part of the National Animal Health Reporting System.

A standardized list of reportable diseases would create uniformity across states and satisfy international requirements for reporting disease outbreaks to the World Organisation for Animal Health (OIE).

The board approved revising the AVMA policy on certificates of veterinary inspection on recommendation of the Council on Veterinary Service with the support of the AVMA Animal Agriculture Liaison Committee.

The policy now includes the following statement: "The AVMA supports the implementation of a uniform interstate livestock and companion animal Official Certificate of Veterinary Inspection."

The intent of the addition is to encourage APHIS to consider addressing the idea of a uniform interstate certificate during development of the new national disease traceability program for livestock.

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## APHIS Commits to Delivering Faster Vaccine Approvals: ACVPM Diplomates Involved

Animal-use vaccines will likely become licensed more quickly as a result of changes in Department of Agriculture processes, department officials said. The USDA Animal and Plant Health Inspection Service also announced that the agency plans to reduce the amount of time taken to assess risks and implement new rules. Dr. John R. Clifford, deputy administrator for APHIS Veterinary Services, said in a conference call Nov. 14, 2011, that while APHIS is a regulatory agency with oversight accountability, it should and can put "customers" first and deliver services efficiently, effectively, cheaply, and quickly.

"So by significantly shortening the timelines of those processes that APHIS customers use most, APHIS will be providing them with valuable savings, something much needed as companies have been increasingly challenged by today's economy," Dr. Clifford said. The conference call followed publication of a letter to stakeholders from APHIS Administrator and ACVPM Diplomate **Gregory L. Parham**, who said the agency is committing to changing long-standing processes in response to complaints about slow license and permit approval processes, burdensome rule-making procedures, and confusing applications of some regulations. "Our work was based on the premise that APHIS can be both a strong regulatory agency and business-minded at the same time, while increasing our transparency, accountability, and the predictability of our processes," the letter states.

*Continued on page 13*



### Epidemiology and Clinical Features of Lyme Disease

**Date:** Tuesday, March 6, 2012

**Time:** 2:00 - 3:00 pm  
(Eastern Time)

**Join by Phone:**

**Dial:** 888-790-6180

**Passcode:** 1281914

**Join by Webinar:**

[https://  
www.mymeetings.com/  
nc/join.php?  
i=PW7035569&p=128  
1914&t=c](https://www.mymeetings.com/nc/join.php?i=PW7035569&p=1281914&t=c)

Join for this webinar where a CDC subject matter expert will review the epidemiology of Lyme disease, early signs and symptoms of Lyme disease, appropriate use of diagnostics, recommended treatment guidelines, and prevention practices.

## EPA Responds to Public Comments on Spot-on Flea and Tick Products

The Environmental Protection Agency has responded to comments on its action plan to address safety concerns with spot-on pesticides used to control fleas and ticks on cats and dogs.

The EPA called for comments in spring 2010 and released its response in fall 2011.

Among other comments, some members of the public requested that the EPA ban pesticide products that can kill cats or require explicit labeling on spot-on products for dogs that describes the dangers that the products pose to cats.

The EPA responded that it does not intend to cancel dog spot-on products containing ingredients that can be toxic to cats, but the agency is working with manufacturers to change labeling of spot-on products to address the risks of these products to cats.

The labeling changes would split spot-on products that can be used in both cats and dogs into separate products, include the word "cat" or "dog" in the product name, repeat "cat" or "dog" throughout directions for use, and add images and language on dog products warning against use in cats.

In addition, the EPA is working with manufacturers to add information to labels about possible adverse effects

of spot-on products, including instructions to consult a veterinarian or the manufacturer if any adverse effect occurs.

The AVMA, among its other comments, stated that veterinarians should have a bigger role in the use of pet spot-on products. The Companion Animal Parasite Council, Humane Society of the United States, and members of the public also suggested a need for more veterinary involvement.

The EPA responded that it lacks the authority to require that pet owners purchase pet pesticides only from veterinarians rather than over the counter. The agency does recommend that pet owners consult their veterinarians about how to protect their pets from fleas and ticks.

The EPA's response to comments on spot-on products is available at [www.epa.gov/opp00001/health/pets.htm](http://www.epa.gov/opp00001/health/pets.htm). The AVMA's comments and advice on the safe use of spot-on flea and tick products are available at [www.avma.org/animal\\_health/flea-tick-products.asp](http://www.avma.org/animal_health/flea-tick-products.asp).

The EPA recommends that veterinarians report adverse effects of pesticides via the National Pesticide Information Center's Veterinary Pesticide Adverse Effects Portal at <http://npic.orst.edu/vet>.

JAVMA

**"If you do not feel yourself growing in your work and your life broadening and deepening, if your task is not a perpetual tonic to you, you have not found your place."**

– Orison Swett Marden, American writer



### Updated wildlife disease manual available

Contributions by 6 ACVPM Diplomates!

Dr. Hayley Adams  
 Dr. Danelle Bickett-Weddle  
 Dr. Lisa Conti  
 Dr. Timothy S. Frana  
 Dr. Carla Huston  
 Dr. Thomas Kasari

The latest edition of the American Association of Zoo Veterinarians' notebook can be downloaded for free at: [www.aazv.org](http://www.aazv.org). The peer-reviewed "Infectious Disease Manual 2011" is intended for clinicians, pathologists, and wildlife biologists. Along with fact sheets on more than 150 transmissible animal diseases, the AAZV manual lists reportable diseases and regulations for all 50 states, Canada, and Mexico.

## Spreading the One-health Concept: Partners in Prevention

Human, animal, and ecosystem health intertwine to make "one health."

For five years, a movement stemming largely from the veterinary community has promoted the one-health concept and an accompanying one-health approach involving collaboration among the health professions and relevant associated disciplines to improve health locally and globally.

In that time, the one-health concept has resonated increasingly in academia and government, especially in fields related to public health. The idea remains less familiar to many veterinarians and physicians in private practice, although they often encounter zoonoses and other examples of the one-health concept in their work.

### One Health Commission

As AVMA president from July 2006 to July 2007, Dr. Roger K. Mahr envisioned a broad movement and, particularly, creation of a One Health Commission to focus attention on the one-health concept. Today, he is the chief executive officer of the commission.

"It's been very heartening to reflect on the various activities, the leadership, and the support that are coming forth toward the one-health approach," Dr. Mahr said.

In response to a recommendation from Dr. Mahr, the AVMA Executive Board formed a one-health task force in 2007. The task force paved the way

for a joint steering committee in 2008, and the committee transitioned to the One Health Commission. The commission incorporated as a nonprofit in June 2009 with initial membership consisting of veterinary, human health, and other relevant organizations.

Also in recent years, Dr. Mahr said, new one-health centers and groups have been developing in academia and government. Iowa State University's One Health Consortium attracted the One Health Commission to establish permanent headquarters at ISU in January 2011. Now the commission and university are working together to create and implement a joint strategic business plan.

The one-health concept is not new, Dr. Mahr noted. He said the interdisciplinary one-health approach has long been key in fields such as comparative medical research, disease surveillance, food safety, and the human-animal bond.

Dr. Mahr said the One Health Commission aims to inform all audiences about the one-health approach by establishing a center for communications and resources. The commission also seeks to promote more collaboration among health professions and relevant disciplines by facilitating demonstration projects that illustrate the value of the one-health approach.

The book "Zoonoses: Protecting People and Their Pets" will be the first demonstration project. The ISU Center  
*Continued on next page*

## Spreading the One-health Concept (cont.)

*Continued from previous page* for Food Security and Public Health is producing the new reference on zoonoses of companion animals as an expansion of a 2008 handbook on the subject.

The plan is to create a grant program to offer the new books and support materials free of charge to students of veterinary medicine, human medicine, and public health. The books and support materials also will become available to health care practitioners.

### Spreading the word

The One Health Initiative website, [www.onehealthinitiative.com](http://www.onehealthinitiative.com), is an independent effort to promulgate the one-health concept. The site features one-health news, events, and publications along with other information relevant to the one-health movement.

Dr. Bruce Kaplan and two physicians—Laura H. Kahn, MD, and Thomas P. Monath, MD—created the website in October 2008. Research scientist Jack Woodall, PhD, later joined the team. The site has attracted an international audience, Dr. Kaplan said, and traffic has expanded exponentially in three years.

Dr. Kaplan is a longtime supporter of the interdisciplinary one-health approach as a means to expand scientific knowledge, accelerate medical research discoveries, and enhance efficiency in public health.

"All of these features, once fully implemented, will obviously significantly help improve medical education as well as clinical care measures," Dr. Kaplan said. "Consequently, practitioners of veterinary



### Commission members:

- AVMA
- Association of American Veterinary Medical Colleges
- American Medical Association
- Association of American Medical Colleges
- Association of Academic Health Centers
- American Public Health Association
- Infectious Diseases Society of America

medicine and human medicine will reap rewards in a multiplicity of ways."

Dr. Kaplan said the one-health concept has become fairly widespread in academia and government in the United States and around the globe. Adoption of the one-health approach in these sectors is partly a response to the fact that most emerging and re-emerging diseases are zoonotic, he said.

Two journals are consulting with the One Health Initiative website team to promote the one-health concept to more veterinarians, physicians, and other health scientists. Clinician's Brief, which is the journal of the North American Veterinary Conference, and Infec-

tion Ecology & Epidemiology, a journal out of Sweden, have begun featuring articles relevant to the one-health concept.

Among other efforts, the website team recently consulted with the mayor of Moscow, Idaho, on the adoption of a one-health resolution by the National League of Cities.

### CDC Office of One Health

The Centers for Disease Control and Prevention is among the governmental agencies that have been implementing the one-health approach. In 2009, the CDC established a One Health Office, now within the National Center for Emerging and Zoonotic Infectious Diseases.

Dr. Carol S. Rubin, director of the office, said the current one-health movement and other factors influenced formation of the office. She said many or-

## Spreading the One-health Concept (cont.)

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"I think there was a bit of a concern during the last few years that there had been a lot of talk and perhaps not enough action," Dr. Rubin said. "We're now seeing real progress toward integrating 'one health' into surveillance and outbreak response—and getting closer to making it the normal way of doing business."

The CDC One Health Office has placed veterinary medical officers around the world at international agencies and in countries that are potential sites for emergence of diseases. The officers work in surveillance, epidemiology training, outbreak investigations, and communications.

"We consider them a network and a resource—certainly a resource to CDC but also a resource to external partners," Dr. Rubin said. "It's an unusual kind of job description, because it's someone who can have one foot in both the animal side and the human sector."

The One Health Office also works to increase collaboration among animal and human health professionals within the United States. The office recently coordinated with veterinary and wildlife professionals, for example, during an investigation into a case of a human naturally acquiring inhalational anthrax in Minnesota.

### Reaching physicians

The Infectious Diseases Society of America just became the newest member of the One Health Commission. The IDSA represents nearly 10,000 physicians, scientists, and other professionals who focus on infectious diseases.

James M. Hughes, MD, IDSA representative to the One Health Commission, is a professor of medicine and public health at Emory University in Atlanta and past director of the former CDC National Center for Infectious Diseases. He has long valued interac-

tions with veterinarians.

"There are a lot of common concerns that members of IDSA share with their veterinary colleagues," said Dr. Hughes, adding that a small number of veterinarians belong to the society. These common concerns include food-borne disease, antimicrobial resistance, health care-associated infections, spread of disease through the wildlife trade, and emergence of new pathogens.

The veterinary community deserves credit for advancing the one-health concept in recent years, Dr. Hughes said. "The level of awareness and interest has clearly increased across a number of medical and biomedical organizations," Dr. Hughes said. "The question now is: What's the way forward in this era of severe fiscal constraints?" Despite various challenges, the public health community has begun to embrace the one-health concept, according to Dr. Hughes.

### Looking ahead

To enhance communication about the one-health approach, the One Health Commission recently redesigned its website to be a more extensive and interactive resource. The commission's website, [www.onehealthcommission.org](http://www.onehealthcommission.org), now provides more information about the one-health concept and a "who's who" of the commission and the broader one-health movement. The site also provides news, events, and reference material relevant to the interdisciplinary one-health approach.

"There have been significant successes through this interdisciplinary approach over the years," Dr. Mahr said. "As we now embrace the term 'one health' and bring more focus to the importance and value of this interdisciplinary approach, we trust that there will be more and even greater achievements toward improving the health of people, domestic animals, wildlife, plants, and our environment."

*By Katie Burns*

## With Great Sadness...

### Frederick L. Helm

Dr. Helm (KSU '69), 66, Hilo, Hawaii, died June 2, 2011. He joined the Army as a captain following graduation. During his more than 30-year military service, Dr. Helm participated in the Vietnam War and Operation Desert Storm. He was a diplomate of the American College of Veterinary Preventive Medicine. Dr. Helm is survived by a son and a daughter.

While attending Kansas State, Dr. Helm was in the Reserve Officers' Training Corps and was commis-



sioned in the army as a captain after graduation. His military service took him to many different countries and states including, Thailand, Vietnam, Panama, Washington D. C., and Hawaii.

He married Michelle Cabrall of Hilo and they adopted two children, Natasha and Andrew. While stationed in Hawaii, he received his Masters of Science in Public Health at Manoa, Hawaii in 1981. He retired as a U.S. Army Colonel.

*JAVMA, McCook Daily Gazette*

## Putting the Science into Science-based Medicine

Texas A&M University professor Dr. Noah D. Cohen shared with equine practitioners how they can use epidemiologic principles and findings in day-to-day practice during his Frank J. Milne State-of-the-Art Lecture. The honorary lecture was held Nov. 20, 2011, during the American Association of Equine Practitioners' 57th Annual Convention in San Antonio, Texas.



Dr. Noah D. Cohen talks about epidemiology during the Frank J. Milne State-of-the-Art Lecture. Courtesy of the AAEP.

The common perception of epidemiology among equine practitioners is that it is concerned with areas such as public health, food safety, and regulatory medicine. In actuality, Dr. Cohen said, epidemiology also is directly relevant to individual patient care.

Equine practitioners often deal with populations of horses, either at settings such as racetracks, showgrounds, and barns or in groupings by activity level or disease. Also, when examining an individual horse, a veterinarian brings to bear information from the population of similar patients he or she has examined or that have been examined by others. Plus, solid clinical evidence provides the basis for everything a veterinarian does, including collecting a history, obtaining a diagnosis, performing a

physical examination, and prescribing preventive treatment.

According to Dr. Cohen, epidemiology is the fundamental science of evidence-based medicine; the most clinically relevant evidence is derived from epidemiological studies of patients. Practitioners should keep in mind, though, that there is a hierarchy of clinical evidence, he said. At the top of this pyramid are systematic reviews and meta-analyses. Following that

are, in order of decreasing reliability, randomized, controlled, double-blind studies; cohort studies; case-control studies; case series; case reports; ideas, editorials, and opinions; animal research; and, finally, in vitro research.

Epidemiology can help veterinarians to consider and identify a cause of disease or other health-related outcome—be it a diagnostic test result, a response to treatment, or a prognosis—by studying associations.

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## Putting the Science into Science-based Medicine (cont.)

*Continued from previous page* caused by confounding.

But it's important for veterinarians to remember that single causes that are both necessary and sufficient are rare, Dr. Cohen said. Instead, health outcomes often have many component causes, and disease occurs when all components of a sufficient component set are accumulated. With a racing injury, for example, the practitioner must take into consideration that there are many components that may contribute to an injury event, such as the presence of pre-existing lesions, the type and condition of the track surface, the class of the race, the accumulation of high-speed exercise, and the sex of the horse. Many of these multiple components must come together before an injury occurs.

After introducing basic epidemiologic concepts, including causation, prevalence and incidence, and measures of association such as odds ratios and risk ratios, Dr. Cohen selected five clinically relevant "facts" from published reports and illustrated how only one of the five was likely to be valid. These examples were as follows:

- That certain breeds are at greater risk for colic.
- That risk factors for strangulating intestinal obstruction, such as a high peritoneal fluid lactate concentration, can be used to classify horses as having a strangulating versus a nonstrangulating obstruction.
- That tests for detecting antibodies against the causal agent of equine protozoal myeloencephalitis are highly sensitive and specific and, therefore, highly accurate for diagnosing the disease.
- That heparin is ineffective for preventing laminitis among horses with forms of colic that require surgery.
- That furosemide reduces the severity of exercise-induced pulmonary hemorrhage.

Of these five, only the validity of the fifth item was considered to be sound, he said. For example, with regard to the possible association between certain breeds and the risk of colic, Dr. Cohen said these associations might be valid, but they also might be

Confounding is the apparent association between a given risk factor and disease explained by some other factor for which one hasn't accounted. So, the observed differences in risk of colic between groups might be due to breed, chance, or other factors not taken into account.

"If activity level and breed are associated, maybe breed isn't a cause of colic, but instead, the activity level explains the risk of colic," Dr. Cohen said. "For example, if Thoroughbreds are more active and activity level is known as a risk factor for colic, then the association between Thoroughbreds and colic might be attributable to activity level."

Epidemiology can help veterinarians to consider and identify a cause of disease or other health-related outcome—be it a diagnostic test result, a response to treatment, or a prognosis—by studying associations. Confounding, then, can result in an association appearing to be present when none exists, or vice versa.

"It's safe to assume there is always some degree of confounding, because two groups compared are rarely ever completely the same. Associations of breed and colic may be confounded, so we may question validity," Dr. Cohen said, and thus, practitioners should carefully consider potential confounders when reviewing the literature.

A recognized expert in equine infectious disease, epidemiology, and internal medicine, Dr. Cohen is the director of the Equine Infectious Disease Laboratory at Texas A&M's College of Veterinary Medicine & Biomedical Sciences. He received his DVM degree from the University of Pennsylvania in 1983. In addition, he holds a master's in public health and a doctorate in epidemiology from the Johns Hopkins Bloomberg School of Public Health. Dr. Cohen is a diplomate of the American College of Veterinary Internal Medicine.

*By Malinda Larkin, JAVMA*

## APHIS Commits to Delivering Faster Vaccine Approvals (cont.)

The letter indicates the agency, in considering possible changes, focused on reducing the time needed to license animal-use biologics, improving tribal consultation, evaluating the regulatory status of genetically engineered organisms, improving efficiency of the enforcement process for regulatory violations, improving the efficiency of the risk assessment and rule-making processes for imported plant and animal products, reducing complaints and calls for investigations of employee misconduct, and improving efficiency of complaint investigations.

ACVPM diplomate Dr. **Richard E. Hill**, director of the APHIS Center for Veterinary Biologics, said the proposed changes could reduce the average time taken to approve licenses for veterinary biologics by more than 20 percent, or about 100 days. Toward that goal, APHIS actions would encourage submission of statistical data in a standardized format; modify rules on labeling from a system of tiered claims to a single, standardized claim; encourage companies to produce development plans that detail expectations and strategies; and provide critical path agreements to show what is needed to gain a license.

Dr. Hill said veterinarians, animal owners, and state and federal agencies that use veterinary biologics "will all benefit from earlier access to the newest

*Continued from page 6* product advances." Biologics producers also could invest more money toward developing vaccines for emerging needs, more quickly market products, and save millions of dollars in development cycles.

Stephen O'Neill, chief of regulatory analysis and development for APHIS, said the agency and trading partners both saw the need to reduce the time taken for risk assessments and rule making. The agency was working to reduce process-related delays, provide standard operating procedures, and set clear expectations for timeliness of agency work. Changes planned so far could reduce by one-quarter or one-fifth the time needed for risk assessments, O'Neill said.

About 1,060 days typically pass between when the APHIS conducts a risk assessment and publishes an animal health rule, O'Neill said. But the proposed business improvements could reduce that average to 770 days. Evaluating and upgrading a country's status connected with a particular disease currently takes about 885 days, but that average could be decreased to about 660.

O'Neill said that the internal process changes are not going through the regulatory rule-making process. The agency has not set a timeline for implementation.

*By Greg Cima , JAVMA*

## Epidemiology Specialty News

The annual meeting of the Epidemiology Specialty will be held in San Diego at the annual AVMA meeting on Sunday, August 5, 2012 from 1:00 to 3:00. More information about the meeting, including the location, will be sent to Diplomates via the listserv.

All specialty members are encouraged to attend. The Epidemiology Specialty needs to hold an election for Secretary. Information on candidates and voting will be sent soon. Two candidates will sit for the Specialty examination this year.

*Bruce R. Burnham, DVM, MPH*  
Epidemiology  
Specialty  
President



## Executive Vice President Update

I just want to thank everyone for paying their 2012 board certification dues. This year I don't have many invoices to resend and those are most likely because of email address changes. If you have not changed your address on the website, please do that. If you have not received your dues invoice yet shoot me an email please. I sent them out in December and January.

This year we had 81 applications to take the test in June. They are busy studying so if you come across one of them please ask them if there is anything you can do to help.

We just had the exam committee meeting last week and discussed this year's essay questions. They are super easy and everyone will pass.....ha ha. The multiple choice questions have now been put into a database which should make it easier to weed out the bad questions and enter new more updated

questions.

If you are interested in becoming a member of a committee please go to the website <http://www.acvpm.org/Leadership.aspx> and contact the Chair of that committee. You can see what the committees do by looking at the Constitution and By Laws on the website under: Other Info tab/Library.

Don't forget about AVMA this year in San Diego. The Annual meeting will be on Sunday from 3 to 6pm. I have not received the location yet but usually it's near the Conference Center. We will also have a booth there so please stop by and better yet, volunteer to work there - you can volunteer by contacting Dr. Patti Scharko: [PSCHARK@clemsun.edu](mailto:PSCHARK@clemsun.edu)

*Candace McCall*

## New Virus! "Schmallenberg" Virus: Likely Epidemiological Scenarios and Data Needs

Since autumn 2011, a previously unknown virus, provisionally named as "Schmallenberg" virus (SBV), has been reported in ruminants (cattle, sheep and goats) from Germany, The Netherlands, Belgium, the United Kingdom and France. In January 2012, the European Commission requested scientific assistance from the European Food Safety Agency (EFSA) under the provisions of Article 31 of Regulation (EC) No 178/2002. Among others, a preliminary analysis of the likely epidemiological scenarios that could be observed in the next months was requested, based on the existing knowledge of viruses of the Simbu virus serogroup and other vector borne epidemics in the region. The provided link on page 18 leads to the report which provides likely epidemiological scenarios and data needed to improve the understanding of the disease spread and impact of SBV.

The report mainly focuses on animal health aspects. Current knowledge suggests that it is unlikely

that SBV can cause disease in humans and as stated in the rapid risk assessment carried out by the European Centre for Disease Prevention and Control (ECDC). No additional information has since become available to invalidate this assessment. However, EFSA and ECDC are closely monitoring the situation in order to address public health concerns should these arise.

There is currently very limited knowledge specifically related to SBV. Available information on the SBV genome suggests that this virus is part of the Simbu serogroup of the Bunyaviridae family. SBV has been detected in ruminants. Main clinical signs observed in cattle are fever, loss of appetite, up to 50 percent reduction in milk yield and, in rare cases, severe diarrhea, for approximately one week. SBV has also been detected in association with a variety of congenital abnormalities observed in still-born or newborn lambs and calves.

*Continued on page 18*

# Evidence-Based Veterinary Medicine Association (EBVMA)

## What is the EBVMA and what is its purpose?

The EBVMA is composed of veterinarians, other veterinary professionals, and students who believe that the principles and methods of evidence-based medicine should become the foundation of veterinary medical training and practice.

The EBVMA is a relatively young association. It was proposed at the 1st Evidence-Based Veterinary Medicine Symposium held in 2004 and formally organized two years later at the 2nd Symposium.

Today, the EBVMA is actively involved in assisting veterinarians in using EBVM to improve animal health outcomes through:

- Maintaining a website ([www.ebvma.org](http://www.ebvma.org)) that provides links to EBVM blogs, recent literature articles, members' contact information, prior symposia topics, and clinical guidelines.
- Providing a roster of professionals to assist in: answering specific EBVM questions, supplying information on previously completed meta-analyses, or offering guidance for conducting literature searches.
- Operating an email mailing list, Facebook page, and a folder on the Veterinary Information Network to keep the conversation going between members.
- Conducting symposia every two years with workshops that introduce key concepts along with lectures discussing recent research and practical applications of EBVM methods.

## Who should consider joining the EBVMA?



Professionals involved in all aspects of veterinary medicine will derive benefit from joining the EBVMA. Librarians involved in supporting veterinary medicine are also welcomed as members of the Association. In addition, students enrolled in DVM/VMD or equivalent degree programs, and individuals enrolled in master's degree, doctoral degree, residency or intern programs related to veterinary medicine are invited to join and benefit from linking with a community of experts in EBVM.

The EBVMA is an international organization. Our members are engaged in academic, private, military, and institutional practice and are involved in public health, epidemiology, research, teaching, herd health management, population medicine, and the practice of veterinary medicine at offices, farms, and other animal facilities across the world.

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## What can the EBVMA do for me?

The EBVMA has been an instrument not only for leading on EBVM issues and the advancement of veterinary medicine but also as the basis for the formation of lasting professional relationships. It serves as a network for like-minded professionals and liaisons for interacting with other schools of thought. In addition, members enjoy benefits from some or all of the following:

- Improved service to clients: EBVMA membership offers the veterinary practitioner the expertise to incorporate into their practice those aspects of EBVM that will offer their clients state-of-the-art health care guidance for their individual companion animals or for their animal production herds.

*Continued on page 17*



**A government biosecurity advisory panel has expanded on its decision to recommend that two manuscripts describing mutations in the H5N1 virus that make it more transmissible between mammals be published in incomplete forms.** In essence, the US National Science Advisory Board (NSABB) made the recommendation because the research, if published in its entirety, would contain detailed information that could put dangerous strains of bird flu into the hands of terrorists. "Because the NSABB found that there was significant potential for harm in fully publishing these results and that the harm exceeded the benefits of publication, we therefore recommended that the work not be fully communicated in an open forum".

## Upcoming Meetings and Events

**5th Evidence-Based Veterinary Medicine Association (EBVMA) Symposium**  
New Orleans  
May 30, 2012  
(Day before ACVIM Conference)

9:00am - 12:00 pm: An Introduction to EBVM. This interactive workshop, led by some of the leading teachers and practitioners in the field, will introduce you to the key concepts and methods of evidence-based veterinary medicine.  
1:00pm - 5:00 pm: The Latest in Applied EBVMA. A series of lectures discussing recent research and practical application of evidence-based medicine methods, including the latest Veterinary Emergency & Critical Care guidelines for CPR, research reporting guidelines, outcomes assessment tools, and more. Speakers include Dr. Daniel Fletcher (Cornell University), Dr. Paul Morley (University of Colorado) and Dr. Sandi LeFebvre (Banfield).

More information available at:  
<http://www.ebvma.org/?q=content/2012-symposium>

**15th International Conference on Infectious Diseases (ICID)**  
Bangkok, Thailand  
June 13-16, 2012

The 15th ICID will be a chance for ongoing collaborative efforts to present and share their experiences fighting infectious diseases. To commemorate the 30th year of our Society we are keen to provide attendees with an outstanding scientific program that will run the spectrum from cutting edge research with clinical implications, to state of the art practices in infectious diseases by a truly international faculty composed of world leaders in their areas. More information available at:

<http://www.isid.org/icid/>

**PLENARY SPEAKERS:**  
Dr. Duane J. Gubler ~ The Future of Dengue  
Dr. Ching-Lung Lai ~ Treating Hepatitis B in 2012  
Dr. Sharon Lewin ~ Curbing HIV  
Dr. Didier Pittet ~ Infection Control

Early registration deadline: 16 April 2012!

**13th Conference of the International Society for Veterinary Epidemiology and Economics (ISVEE XIII)**  
Maastricht, Netherlands  
August 20-24, 2012

Motto of the conference will be: Building Bridges – Crossing Borders. In conjunction with the ISVEE 13 Conference, the organizing committee wants to offer a limited number of high quality pre- and post-Conference courses to ISVEE 13 participants. Pre- and post-conference courses will take place in the city of Ghent in Belgium (170 km from Maastricht).

Please download the fourth Newsletter:

[http://www.isvee13.org/im-ages/stories/ISVEE13\\_NEWSLETTER\\_No\\_4.pdf](http://www.isvee13.org/im-ages/stories/ISVEE13_NEWSLETTER_No_4.pdf)

Please also visit the website of ISVEE 13 for detailed information on other items:

<http://www.isvee13.org/>





## FDA Curbs Livestock Antibiotics

The US Food and Drug Administration announced January 2 that a certain class of antibiotics should only be used in farm animals under limited circumstances because of its likely contribution to antibiotic resistance in humans. The drugs, known as cephalosporins, are frequently used to treat pneumonia, strep throat, and urinary tract infections in humans. Cephalosporins require a prescription, and are often injected into chicken eggs to prevent infection, and administered directly to treat illness in cattle and pigs.

# Evidence-Based Veterinary Medicine Association (EBVMA)

*Continued from page 15*

- Enhanced service to the global EBVM community: The EBVMA is constantly changing to meet the evolving professional needs of its constituency. Members from all over the world contribute to the available veterinary literature.
- Enhanced professional stature: As veterinarians continue to practice in challenging times, members interact more frequently with other EBVM veterinarians and veterinary professionals to share knowledge and assistance. EBVMA membership is regarded as a sign of an inquiring mind which continues to pursue the improvement of veterinary medicine by using EBVM in practice or building upon the existing veterinary database.

### What are the eligibility requirements for EBVMA membership?

Although all potential candidates are encouraged to review the complete application process as outlined at [www.ebvma.org](http://www.ebvma.org), the following are general guidelines:

- Be a graduate of an accredited veterinary college or a non-veterinarian actively engaged in some aspect of evidence-based veterinary medicine (librarians are vital members in this category).
- Have an interest in learning or supporting EBVM.
- Can be a student enrolled in a DVM/VMD or equivalent degree program or in a master's degree, doctoral degree, residency or in-

tern program related to veterinary medicine.

- Submit a nominal membership fee (no fee for students).

### Where can I get more information about the EBVMA?

One way to obtain more information on the EBVMA is from the organization's website ([www.ebvma.org](http://www.ebvma.org)). We also encourage interested veterinarians and veterinary professionals to contact the current EBVMA leadership via the contact form on the EBVMA home page.

The Evidence-Based Veterinary Medicine Association wishes you the very best in your professional endeavors and stands ready to assist you in any way possible. Remember, the focus of EBVMA is on providing the greatest veterinary care possible to those we serve.

See page 16 for information on the upcoming EBVMA Symposium being held in New Orleans on May 30 just prior to the ACVIM Conference.



## New Virus! "Schmallenberg" Virus: Likely Epidemiological Scenarios and Data Needs (cont.)

*Continued from page 14*

In the absence of SBV specific knowledge regarding pathogenesis of SBV infection, an analogy was made with knowledge on Akabane virus, another representative of the Simbu serogroup. It is known that the pathogenic effects of infection with Akabane virus are only seen when the virus exceeds the geographical boundaries of the endemic area and infects susceptible animals in early stage of pregnancy. Such a situation is likely to occur at the edges of an endemic area and may be due to the movement of either infected hosts or infected vectors.

Without knowing the susceptibility to SBV in animal populations throughout the EU, and assuming that SBV induces a strong immunity similar to Akabane virus, 3 types of epidemiological situations can be envisaged: 1) areas where a recent incursion might have occurred in populations not previously exposed to the pathogen, that is naïve populations, causing clinical disease in adult animals and, at a later date as consequence of infection of dams, malformation in fetuses; 2) areas where incursion occurred in the past and part of the ruminant population is immune and where congenital malformations are not observed or observed at a low level (mainly not reported); and 3) areas where no virus incursion occurred but a susceptible population is present. Surveillance data, as proposed in this report, should be collected by and shared between Member States in order to assess the immune status of animal populations, the impact of SBV infection, and further spread throughout EU. This should include data from serological surveillance also in areas where SBV has yet not been reported.

Due to limited information on the epidemiology of SBV, EFSA used a bluetongue virus (BTV8) model to assess under which conditions SBV could spread into susceptible populations. BTV8 was chosen because; 1) BTV8 is an exclusively vector transmitted diseases as are other Simbu serogroup viruses 2) BTV8 and SBV are circulating in the ruminant population 3) information is available regarding BTV8 in Europe whereas there has only been one case report for viruses of the Simbu serogroup in Europe. Assuming that SBV is a non-direct transmissible, vector borne, infectious disease, that vector parameters for the spread of SBV are those for BTV8, and using indications on SBV viremia given by a preliminary experimental infection in cattle, the hypothetical scenarios show that, depending on the temperature and the number of vectors, SBV might spread further in susceptible populations. Whenever the number of vectors per host and the temperature are above a specific threshold there is a possibility of a wider disease epidemic affecting more Member States. EFSA proposes a coordinated data collection in all Member States in 2012 on the incidence and prevalence of the disease, number of malformed fetuses, as well as the presence of the virus in dams.

Communicated by: Sabine Zentis (Germany)

[The full technical report (31 pages) is available at:

<http://www.efsa.europa.eu/en/supporting/doc/241e.pdf>.

*ProMed*

**"Things don't turn up in this world unless somebody turns them up."**

– James A. Garfield, 20th U.S. president

**"It is a fair, even-handed, noble adjustment of things, that while there is infection in disease and sorrow, there is nothing in the world so irresistibly contagious as laughter and good-humour."**

– Charles Dickens, British author

# Modeling Dengue Fever

## A NIMBioS Investigative Workshop

The National Institute for Mathematical and Biological Synthesis (NIMBioS) is now accepting applications for its Investigative Workshop, "Modeling Dengue Fever Dynamics and Control" to be held July 23-24, 2012, at NIMBioS.



ing/validation.

Location: NIMBioS at the University of Tennessee, Knoxville

Co-Organizers: Derek Cummings, Johns Hopkins Bloomberg School of Public Health; Zhilan Feng, Mathematics, Purdue Univ.; Jorge

Objectives: More than one-third of the world's population lives in areas at risk for the transmission of dengue, a vector-transmitted disease that is one of the leading causes of death and illness in the tropics and subtropics. This workshop will bring together public health officials as well as mathematicians, biologists and epidemiologists to promote an interdisciplinary approach to identifying important issues in modeling Dengue transmission dynamics and control; to encourage the establishment of new collaborations for research on Dengue and other infectious diseases with non-human transmission components; and to develop Dengue virus models that incorporate important features such as vector dynamics and control, serotype interactions and immunity, and at the same time allow for model test-

Velasco-Hernandez, Mathematics, UAM-Iztapalapa, Mexico; Michael Johansson, Centers for Disease Control and Prevention

For more information about the workshop and a link to the online application form, go to [http://www.nimbios.org/workshops/WS\\_dengue](http://www.nimbios.org/workshops/WS_dengue)

If needed, applicants may request travel and lodging support. Workshop participants are selected through an open application process. Individuals with a strong interest in the topic, including post-docs and graduate students, are encouraged to apply. Those selected to attend will be notified within two weeks after the application deadline.

## APHA Veterinary SPIG Update!

Greetings Diplomates:

The Vet PH SPIG of the APHA has had a very active year. We appointed new leaders at our annual meeting and your own Tom Doker is the Chair Elect and will assume those duties in 3 years. The activities of the SPIG for the near future will center on the human health aspects of the human animal bond. Specific topics we will tackle are: analysis of the health effects of dog walking; accommodating pets at shelters for battered women; the effects of training shelter dogs for veterans suffering from PTSD;

and the public health aspects of huge animal feeding operations. Additionally, our proposal to adopt TNVR as the recommended approach to managing community cats will be fine tuned this coming year. We received outstanding input from the AAPHV, and would appreciate a formal review by the ACVPM too. If anyone is interested in these topics please feel free to contact me at [billcourt1@aol.com](mailto:billcourt1@aol.com)

Thank you!

*Bill Courtney, Chair Vet PH SPIG of the APHA*

**"Things don't turn up in this world unless somebody turns them up."**

– James A. Garfield, 20th U.S. president

## Avian Influenza: Case Fatality Estimates

The fatality rate for officially confirmed human cases of H5N1 avian influenza infection is a stunningly high 59 per cent (345 deaths in 584 cases). But the current controversy over publishing data about transmissible H5N1 viruses has revived a debate about whether the virus is as lethal as those numbers say. Some proponents of publishing the full details of 2 studies involving H5N1 viruses that spread by airborne droplets in ferrets say the true case fatality proportion is probably much lower because, they suspect, many mild or asymptomatic cases have gone undetected. If the real number of infections – the denominator – is much higher, the percentage of fatal cases drops. Some have suggested that the real fatality rate is "orders of magnitude" lower. This argument, however, swims against the tide of scientific findings.

The primary way to detect asymptomatic or subclinical cases is to conduct seroprevalence studies, to look for H5N1 antibodies in people who weren't sick but may have been exposed to the virus, such as contacts of confirmed case-patients, poultry cullers, or residents of a village where poultry outbreaks occurred. This has been done a number of times, and in nearly all the studies conducted since 2003, the researchers found very few people who had H5N1 antibodies, if any. For example, in a systematic review published in January 2011, Maria D Van Kerkhove and colleagues listed 20 seroprevalence studies, and in the 17 studies conducted since 2003, the proportion of seropositive subjects ranged from 0 to 2.8 per cent, with most of them reporting none. However, experts say the data are clouded by several uncertainties. One is that researchers differ in their methods and in the antibody titer levels they use to define a positive finding. Another problem is that it's not clear how long H5N1 antibodies persist in the blood. If the antibodies wane with time, a person who is tested months to years after exposure to the virus may test negative even though he or she might have carried antibodies in the past. Still another difficulty is that if someone had an H5N1 infection and is later tested with an assay based on a different clade (strain) of

the virus, the test might not detect the antibodies, experts say.

"There are many, many uncertainties," said Tim Uyeki, deputy chief for science in the Epidemiology Branch of the Influenza Division at the US Centers for Disease Control and Prevention (CDC), who has been involved in many clinical studies of H5N1 patients and H5N1 epidemiologic investigations in various countries. Even with all the unanswered questions, though, most experts seem to think it's unlikely that the number of undetected H5N1 infections is very large. Whether they tested poultry workers, healthcare workers, or patients' family members, most researchers since 2003 have found few people with antibody levels suggesting they had unrecognized infections.

The bulk of the seroprevalence studies have focused on people with possible occupational exposures. For example, a 2006 study in China's Guangdong province showed that only one of 110 poultry workers was seropositive for H5N1. In 2009, testing of 97 firemen, government workers, and veterinarians who had responded to an H5N1 outbreak on Ruegen Island in Germany revealed none with evidence of infection. And in 2007, none of 500 poultry workers and cullers on Vietnamese farms that had H5N1 outbreaks in 2004-05 tested positive. The picture has been much the same for health care workers. In Thailand and Viet Nam in 2004, 3 research teams tested health care workers, nearly all of whom had contact with confirmed H5N1 patients. None of the 168 workers tested positive.

The hunt for undetected cases also has included people without known occupational exposures. One team tested 351 Cambodians living in villages where 2 human cases occurred in 2005; they found no positives, according to their 2006 report. The same group conducted a similar study in villages where H5N1 cases occurred in 2006. This time, 7 of 674 people (one per cent) tested positive.

*Continued on next page*

## Avian Influenza: Case Fatality Estimates (cont.)

*Continued from previous page*

Another Cambodian study by different investigators in 2007 showed that 18 (2.6 per cent) of 700 people living in a village where an H5N1 case had occurred were seropositive.

A curious contrast to this pattern of findings, however, is provided by studies conducted after the 1st human outbreak of H5N1 cases, which occurred in Hong Kong in 1997 and involved 18 cases with 6 deaths. Subsequent serologic studies found considerably higher proportions of people who carried H5N1 antibodies though they had not been sick. For example, testing of 51 household and social contacts of Hong Kong H5N1 patients found 6 (12 per cent) who were seropositive. In another study, 9 (3 per cent) of 293 government workers involved in the outbreak response were found to be seropositive, and the researchers estimated that 10 per cent of poultry workers also had antibodies. In still another investigation, 8 (38 per cent) of 21 health care workers who were exposed to H5N1 patients tested positive. Researchers have suggested that the apparent higher rate of unrecognized infections in the Hong Kong outbreak may be explained by some genetic difference between the 1997 H5N1 strain and more recent ones. In their review of seroprevalence studies, Van Kerkhove and colleagues wrote, "The higher rates of seropositivity in the studies following the 1997 outbreak may reflect the genetic differences in the viruses circulating now compared to the 1997 virus, which may have been more adaptable to human infection."

While the Hong Kong studies may represent a unique situation or strain, there is one more recent study that also contrasts with the general run of findings. A team of researchers from the United States and Thailand in 2008 tested 800 rural Thais living in an area that had numerous poultry outbreaks in the preceding years. They found that 45 (5.6 per cent) of the participants were seropositive for a 2005 strain of H5N1 found in Thailand, and 28 (3.5 per cent) were positive for a 2006 strain.

Positive results were more common in people older than 60 and were not statistically associated with exposure to poultry. However, others say these findings must be taken with caution, because the researchers set a very low bar for a positive test: an antibody titer of just 1:10.

"Unfortunately, I think there are some laboratory methodological issues with these results," said Van Kerkhove, who noted that all the studies she included in her review used a titer of 1:40 (by microneutralization [MN] or hemagglutination inhibition [HI]) as the criterion for seropositivity. She works in the Medical Research Council Centre for Outbreak Analysis and Modeling in the Department of Infectious Disease Epidemiology at Imperial College London.

Likewise, Uyeki commented, "I would say it's difficult to interpret these data because such a low antibody titer was used for the inclusion criteria." He said a positive finding with a titer of 1:10 may represent cross-reactive antibodies to human influenza A viruses, nonspecific cross-reactivity, or a low H5N1 titer that had declined over time, or it might mean nothing. This study exemplifies the problem of different methods and criteria used by different investigators and labs, making findings hard to interpret. There are a number of H5N1 antibody studies that have been conducted in several countries, and they've been conducted in different populations with different sampling methods and different lab methodologies," said Uyeki. "And there's no one standardized approach. If you took the same serum specimen and tested it in different laboratories that did not have expertise in H5N1 serological testing methods, you might get very different results."

*ProMed*

Date: Thu 9 Feb 2012

Source: CIDRAP News [abbreviated & edited]

Entire article available at:

<http://www.cidrap.umn.edu/cidrap/content/influenza/avianflu/news/feb0912subclin.html>