Prevention has never been more important given the events of late. Preparing for natural disasters, such as hurricanes, or accidental introductions of disease agents, like avian influenza, has been on the forefront of everyone’s mind these last several months. Dr. Gayle Brown from the Center has written a brief summary of influenza, both avian and canine, to answer some important questions for you. As you read this, the National SART (State Animal Response Team) meeting just concluded in Baltimore, MD.

HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI)—INFLUENZA TYPE A - H5N1

Since 2003, HPAI H5N1 has been responsible for over 140 million chicken deaths, over 100 humans infections and more than 60 human fatalities in Asia. Now the virus has been detected outside of Asia, most recently in Turkey and Romania, and is spreading via migratory birds. Countries along the fly ways are preparing for the virus to arrive.

An avian influenza virus is defined as highly pathogenic based on the genetics of the virus and/or lethality in experimentally inoculated 4 week old chickens. Traditionally it was believed that avian influenza viruses would not infect humans directly because of receptor differences and human infections with avian influenza viruses were not detected or were extremely rare. Recently that concept has been challenged in two ways: 1) the HPAI H5N1 virus in Asia is infecting humans and 2) the reconstruction of the 1918 pandemic influenza virus suggests it was an avian virus that directly infected humans. The Asian H5N1 virus has characteristics of a potential pandemic virus in that it is a new subtype of influenza that the human population does not have immunity to and it causes serious disease in humans. One major criterion it has not met is the ability to spread easily between people. The 1918 virus did spread easily and rapidly and plans are being made in case this H5N1 virus acquires the ability to spread between people.

Ongoing preparedness efforts include extensive surveillance for the virus, improved diagnostic tests for H5N1 virus, vaccine development, and stockpiling antivirals. Human vaccine for the H5N1 virus has been developed and clinical trials began in April 2005. Research on improved vaccines continues. There are four different influenza antiviral drugs approved for use in humans. These drugs are used prophylactically and in the treatment of influenza. Resistance to three of the four antivirals has been detected in some of the H5N1 virus isolates. Zanamivir, for which no resistance has been detected, has been purchased to be included in US stockpiles.

RESOURCES (IN ADDITION TO CFSPH):

• CDC guidelines for protection of persons involved in U.S. avian influenza outbreak disease control and eradication at:
  http://www.cdc.gov/flu/avian/professional/protect-guid.htm

• USDA’s Biosecurity for the Birds at:

• The National Pork Board fact sheet—Influenza: Pigs, People and Public Health at:
  http://www.porkscience.org/documents/Other/PUBLICHEALTH%20influenza.pdf
Canine Influenza - H3N8
Equine-like virus

In January 2004, 22 racing greyhounds at a Florida racetrack were diagnosed with influenza. The influenza virus isolated was an H3N8 and is related to the H3N8 influenza virus that causes epidemics in equine. Evaluation of the virus isolated from dogs revealed changes in the hemagglutinin protein compared to the equine influenza virus. It is believed that these changes may be responsible for the adaptation of this virus to its new host and its ability to spread among the dog population. Retrospective studies on serum samples from 1999-2003 demonstrated the presence of antibody to the H3N8 virus. No antibody was detected in serum sample from 1996-1998. Between June and August 2005, canine influenza outbreaks were detected in greyhounds at tracks across the US. Infection of pet dogs has also been identified. On August 16, 2005 University of Florida - College of Veterinary Medicine sent out a veterinary advisory regarding canine influenza which is available at: http://www.doacs.state.fl.us/ai/Announcements/20050818_UF_Veterinary%20Advisory_CIV.shtml

Yearly Epidemics of Human Influenza - H3N2, H1N1, and B

In the US, yearly epidemics of influenza infection are caused by H3N2, H1N1, and Influenza B viruses. In 2004-2005, infections by H3N2 influenza virus dominated followed by influenza B and then H1N1 influenza. The human vaccine given yearly contains these three viruses. This year’s influenza vaccine for the general public will be available after October 24, 2005. CDC’s motto is: Protect yourself and your loved ones—get vaccinated.

News (Con’t)

How Are You Using CFSPH Materials… Besides Presentations?

In the next 30 days, we will be randomly emailing some of our trainers to find out how, besides giving the PowerPoint presentations, they are using CFSPH materials to educate others. Our website and resources have grown considerably in the last year so we want to discover all the ways you, our educators, are getting the word out. It helps us discover what materials are well implemented and possibly identify areas of improvement or new material development. Be looking for your email survey soon and we appreciate your time and comments. If you are not randomly selected, but would still like to participate, send an email to Danelle at dbweddle@iastate.edu and she will send one your way. Thanks again for your time!

BT/AT Awareness Education Update

January ‘03 – October ‘05

Reports continue to trickle in… We appreciate your dedication to educating others and your commitment to us at CFSPH. As always, if you have questions, please let us know. Keep up the good work and keep sending in your reports!

• Over 35,057 people have attended bioterrorism/agro-terrorism awareness education sessions!!!
• 156 presenters have given 854 presentations to colleagues and clients in 47 states plus Puerto Rico, Mexico, Brazil, Grenada, Singapore, and Switzerland.
• Thank you all for your efforts!!

Website Resource Update

Photos of Foreign Animal Diseases will be available in the disease fact sheets on the CFSPH website after November 1, 2005. Links will be provided within the PDF file that will take you to images of that disease. Clinical presentation, lesions, and post-mortem images are included to give you a better feel of what to look for should you suspect an emerging or exotic animal disease. These photos were collected from a variety of sources, some never released publicly until now, and Dr. Steve Sorden, pathologist from Iowa State University, wrote the descriptions for each of them. This should provide you with yet another resource to educate others. If you have access to high quality digital images of any of the diseases listed on our website, and are willing to share them for educational purposes, please let us know.

Diseases from Select Zoonotic Agents Wall Chart (18”x27”) lists the human and animal clinical signs for the ‘new’ zoonotic disease agents addressed by the technical fact sheets. It complements the zoonotic agents already displayed on the ‘Bioterrorism Agent with Livestock Pathogens’ wall chart’. The wall charts will be sold individually for $6 each or can be customized for larger orders (500 or more). Orders can be placed by emailing us at cfsph@iastate.edu.

For more information on these products, see our website at www.cfsph.iastate.edu/