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Exotic and Emerging Diseases of Animals: An Internet Course for Veterinary Students

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Exotic and Emerging Diseases of Animals: An Internet Course for Veterinary Students

Abstract

US agricultural and companion animals are very vulnerable to the introduction of exotic and emerging animal diseases (EEAD). These diseases could occur through unintentional introduction (the risk of outbreaks grows as free trade increases), could occur through the deliberate introduction of disease agents (bio-terrorism or agro-terrorism), or could emerge as new diseases. EEAD, for the purpose of this course, are defined as those animal diseases that are reportable in the US. This includes diseases on the Office international des épizooties (OIE) List A, selected diseases on List B that either are not found in the US or are reportable, and selected emerging diseases. Some of the exotic and emerging diseases are considered to be foreign animal diseases because they do not occur in the US. Others are found in the US but are under eradication programs. Some are zoonotic and must be monitored and controlled to protect human health. Many of these diseases are important causes of animal suffering and are economically very important. It is essential that veterinarians be familiar with these diseases and have access to accurate, concise information about their salient characteristics.

Disciplines

Medical Education | Online and Distance Education | Veterinary Microbiology and Immunobiology | Veterinary Preventive Medicine, Epidemiology, and Public Health

Comments

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Exotic and Emerging Diseases of Animals: An Internet Course for Veterinary Students^a

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US agricultural and companion animals are very vulnerable to the introduction of exotic and emerging animal diseases (EEAD). These diseases could occur through unintentional introduction (the risk of outbreaks grows as free trade increases), could occur through the deliberate introduction of disease agents (bio-terrorism or agro-terrorism), or could emerge as new diseases. EEAD, for the purpose of this course, are defined as those animal diseases that are reportable in the US. This includes diseases on the Office international des épizooties (OIE) List A, selected diseases on List B that either are not found in the US or are reportable, and selected emerging diseases. Some of the exotic and emerging diseases are considered to be foreign animal diseases because they do not occur in the US. Others are found in the US but are under eradication programs. Some are zoonotic and must be monitored and controlled to protect human health. Many of these diseases are important causes of animal suffering and are economically very important. It is essential that veterinarians be familiar with these diseases and have access to accurate, concise information about their salient characteristics.

The need for instruction in EEAD in the veterinary curriculum has long been recognized by the US Department of Agriculture, the American Veterinary Medical Association (AVMA), the Association of American Veterinary Medical Colleges (AAVMC), and the US Animal Health Association (USAHA). Veterinary students need to know how to recognize and appropriately respond to EEAD outbreaks. Effective instruction will enable future veterinarians to be in a peak state of readiness for disease outbreaks. Early detection of these animal disease agents and rapid and effective response measures are essential for limiting the economic impact of these diseases.

An internet-based course on EEAD of animals is being developed for use by Colleges of Veterinary Medicine and will be available in January 2003. The course includes detailed scenarios that students can work through at their own pace. The course guides students through various animal disease outbreaks to help them better understand EEAD and how to respond if an EEAD is suspected.

The USDA Cooperative State Research, Education, and Extension Service (CSREES) Higher Education Challenge Grants program provided funding for this project in September 2000 (grant number 00384119278). Faculty from three colleges of veterinary medicine with past leadership in EEAD and international animal health issues worked to design the internet-based course (Iowa State University—James Roth and Eldon Uhlenhopp; the University of California, Davis—David Hird and Janine Kasper; and the University of Georgia—Corrie Brown and Susan Little) and

provided matching funds for the project. USDA APHIS personnel (Aida Boghossian and Paula Cowen) are collaborating on the project. The project team is working with the AAVMC to encourage US colleges of veterinary medicine to use the course to teach veterinary students to recognize and appropriately respond to EEAD.

The course objectives are to

1. understand the importance of the role of the veterinary profession in preventing the incursion of EEAD and in detecting and responding to incursions of EEAD;
2. understand the potentially devastating impact of EEAD on animal welfare, the national economy, food production and human health;
3. appreciate the essential role of the OIE, federal government, and state governments in responding to potential EEAD;
4. have a clear understanding of how to contact the appropriate authorities when an EEAD is suspected;
5. know the immediate measures to be taken to prevent the spread of a suspected EEAD until the state and/or federal authorities can fully respond to the situation;
6. be familiar with OIE List A diseases and selected List B diseases and other animal diseases of premier importance to ongoing eradication programs or human health;
7. know where to search for Web-based or print materials with overview and in-depth information about EEAD animal diseases; and
8. know the salient features of BSE, FMD, screwworm, classical swine fever, avian influenza, and Newcastle disease.

The course includes overview modules on global animal agriculture, modes of introduction of EEAD agents, the role of international, national, and state agencies in controlling outbreaks and appropriate responses to suspected outbreaks, and a description of recent incursions of EEAD.

The course also includes scenarios for outbreaks of EEAD, including Rift Valley Fever, equine respiratory diseases, rabbit hemorrhagic disease, equine neurologic syndrome, dairy cattle abortion, zoo animal diseases, bio-terrorism/agro-terrorism, reptile ticks/heartwater, diseases of poultry/pet birds, ruminant herd diseases, fish diseases, ticks, feline spongiform encephalopathy, ruminant neurologic diseases, screwworm, vesicular diseases of swine, and acute swine diseases.

The course creators have developed a database including 72 of the EEADs that are reportable in the US. Diseases covered include all of the OIE List A diseases and the OIE List B diseases that either are not found in the US or are reportable diseases. A number of exotic agents not currently on the OIE lists are also included. The database provides information in a standard outline format that will be searchable by any of the topics listed in the outline. Links to in-depth information on each disease are also included.

Dr. Radford Davis offered the course (as a one-credit experimental course) to veterinary students at Iowa State University in fall 2002. Completion of the entire course requires approximately 30 hours. Feedback from students is being used to enhance the course prior to its adoption by other colleges of veterinary medicine. The course components can be viewed on the ISU Web site: <http://www.vetmed.iastate.edu/services/institutes/iicab/fad/main.htm>. The project team hopes to offer the course at no cost to participating institutions through the Veterinary Information Network, Inc. (VIN) (<http://www.vin.com>). Contact Dr. Paul Pion at VIN (paul@vin.com) to learn more.

The project team expects that the course will need to be approved as an experimental course by each college's curriculum committee. The course is envisioned as a one-credit required course for veterinary students. It is hoped that each college will assign a faculty member to lead the course. That faculty member does not need to be an expert in EEAD

and can choose to meet with students weekly, monthly, or once per semester. Each unit of the course has corresponding test questions, so students can be tested on the course components they have completed.

NOTE

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