

Chapter 1 : Exotic Viral Diseases: A Global Guide

This disease is a parasitic infection caused by a type of roundworm. It begins when you consume stagnant water contaminated with its larvae. One year after infected, painful blisters will form on your arms and legs.

Highlight and copy the desired format. Wildlife, Exotic Pets, and Emerging Zoonoses. Emerging Infectious Diseases, 13 1 , 6. Abstract Most emerging infectious diseases are zoonotic; wildlife constitutes a large and often unknown reservoir. Wildlife can also be a source for reemergence of previously controlled zoonoses. Although the discovery of such zoonoses is often related to better diagnostic tools, the leading causes of their emergence are human behavior and modifications to natural habitats expansion of human populations and their encroachment on wildlife habitat , changes in agricultural practices, and globalization of trade. However, other factors include wildlife trade and translocation, live animal and bushmeat markets, consumption of exotic foods, development of ecotourism, access to petting zoos, and ownership of exotic pets. To reduce risk for emerging zoonoses, the public should be educated about the risks associated with wildlife, bushmeat, and exotic pet trades; and proper surveillance systems should be implemented. Emerging and reemerging infectious diseases have received increasing attention since the end of the 20th century. The emergence and rapid spread of West Nile virus in North America and the monkeypox outbreak in pet prairie dogs have been major awakening public health events that underscored the need for closer collaboration between the veterinary profession, wildlife specialists, and public health personnel 2 , 3. These events emphasized the role that veterinarians and other wildlife specialists can play in surveillance, control, and prevention of emerging zoonoses, as their training in disease recognition and population medicine makes them well suited for early detection networks 4. Infectious pathogens of wildlife affect not only human health and agricultural production but also wildlife-based economies and wildlife conservation. Zoonotic pathogens that infect domestic animals and wildlife hosts are more likely to emerge 5. Furthermore, our quest for close contact with wild animals and for exotic pets puts us at risk for exposure to zoonoses. Economic Effects of Wildlife Wildlife is a major source of income, either directly for consumptive or productive use value or indirectly for touristic and scientific values 6. For instance, wildlife tourism is among the top exporting activities of Tanzania and Kenya and generates an annual income of approximately half a billion US dollars 6. Even in industrialized countries, wildlife-related activities can generate major income. In Africa, the bushmeat trade is generating hundreds of millions of dollars 7. In the Congo Basin, trade and regional consumption of wild animal meat could reach 4. Worldwide, deer farming has been developing dramatically. Many examples of the emergence or reemergence of zoonoses related to human encroachment on wildlife habitats exist. Deforestation, development of human habitat, and mining activities have been suggested as risk factors associated with the reemergence of vampire bat rabies in humans in the Amazon Basin. In , 46 persons died of rabies transmitted by vampire bats, mainly in Brazil 22 cases and Colombia 14 cases ; only 20 human cases of rabies were transmitted by dogs in all Latin America 9. A similar trend was again observed for When first described in , Kyasanur Forest disease was restricted to a much smaller area square miles in India than the actual 2, square miles of endemic zone This tickborne disease occurs in evergreen rain forests interspersed with deciduous patches and clearings for rice cultivation and human habitations. In , a major epidemic occurred during which several monkeys died, 1, humans were infected, and humans died. The outbreak occurred in previously undisturbed forest where some ha were clearcut to establish a cashew tree plantation. Most of the human patients were immigrant laborers employed to clear the forest As many as 1, human cases occur each year, and this number has increased in the past 5 years. Most cases occur during the dry season Januaryâ€”May , when nymphal activity is maximal. Such a zoonosis is a good example of deforestation and agricultural development leading to human habitat expansion into natural foci of a viral infection. Because cleared areas were widely used for grazing of cattle, a major host for adult ticks, these areas favored the proliferation of the tick *Haemaphysalis spinigera*. Conversely, the reduction of traditional agricultural land and its replacement with forested areas, home to the main reservoirs and hosts of *Borrelia burgdorferi*, in association with the settlement of persons in periurban areas led to a considerable increase in human cases of

Lyme disease in the United States An estimated 23–40 million white-tailed deer inhabited North America before the arrival of Europeans; the deer population was greatly reduced by habitat loss and unrestricted hunting. However, by the mid century, the population was restored throughout North America, and an estimated 14–20 million white-tailed deer are believed to inhabit the United States alone. In many areas of the eastern United States, populations have soared to previously unattained levels [http:](http://) Human activities may also be a source of wildlife infection, which could create new reservoirs of human pathogens. The recent outbreak of tuberculosis caused by *Mycobacterium tuberculosis* in suricats and mongooses was one of the first documented spillovers of a human disease within a wildlife population Banded mongooses were observed feeding regularly at garbage pits and were therefore exposed to human excretions and any infectious material from tuberculosis-infected humans. Caused by the Junin virus, Argentine hemorrhagic fever affects primarily adult male agricultural workers, mainly during the harvest season In the late s and early s, a rabies epidemic occurred in free-ranging greater kudu *Tragelaphus strepsiceros* in Namibia The kudu population had increased considerably in response to favorable conditions and human-made environmental changes. Such combination led to infection of pigs, which developed respiratory and neurologic symptoms after indirect exposure to infected fruit bats that shed the virus. The sick pigs were a subsequent source of human infection Farming of wild animal species led to reemergence of zoonoses such as bovine tuberculosis in captive deer populations. Deer at low population densities on natural range are less likely to be affected to any major extent by disease. However, disease becomes a factor in intensive management of deer Reemergence of zoonotic diseases that had been controlled from their domestic animal reservoirs is also of major concern. Wildlife may become new reservoirs of infection and may recontaminate domestic animals; examples include bovine tuberculosis in the United Kingdom associated with *Mycobacterium bovis* infection in badgers *Meles meles* 18 and brucellosis in outdoor-reared swine in Europe that resulted from spillover from the wild boar brucellosis *Brucella suis* biovar 2 reservoir Wildlife Trade and Translocation Wildlife trade provides mechanisms for disease transmission at levels that not only cause human disease outbreaks but also threaten livestock, international trade, rural livelihoods, native wildlife populations, and ecosystem health 7. Worldwide, an estimated 40, primates, 4 million birds, , reptiles, and million tropical fish are traded live each year 7. Translocation of wild animals is associated with the spread of several zoonoses. Rabies was introduced in the mid-Atlantic states in the s when hunting pens were repopulated with raccoons trapped in rabies-endemic zones of the southern United States In Eastern Europe, raccoon dogs *Nyctereutes procyonoides* are becoming a new reservoir for rabies, in addition to the established red fox reservoir, as raccoon dogs have spread into new habitats from accidental release of animals raised for fur trade Brush-tailed possums *Trichosurus vulpecula* from Tasmania were introduced into New Zealand to establish a new species of fur-bearing animals. Translocation of hares from central and Eastern Europe for sporting purposes led to several outbreaks of tularemia, introduction of *B. Illegal trade can also be a possible source of human infection. In March , psittacosis developed in several customs officers in Antwerp, Belgium A customs officer had been hospitalized with pneumonia 10 days after exposure to parakeets illegally imported by an Indian sailor. The risk of contracting psittacosis was 2. Similarly, a highly pathogenic avian influenza A H5N1 virus from crested hawk eagles smuggled into Europe by air travel has been isolated and characterized 24 ; fortunately, however, screening of human and avian contacts indicated that no dissemination had occurred. Bushmeat, Wet Markets, Exotic Foods, and Zoonotic Diseases Another risk factor related to the emergence of zoonotic diseases from wildlife has been the considerable increase in consumption of bushmeat in many parts of the world, especially Central Africa and the Amazon Basin, where 1–3. The simian foamy virus has been identified as a zoonotic retrovirus that infects people who have direct contact with fresh nonhuman primate bushmeat; this finding indicates that such zoonoses are more frequent, widespread, and contemporary than previously appreciated. Similarly, new retroviruses, human T-lymphotropic virus types 3 and 4 were found in persons who hunt, butcher, or keep monkeys or apes as pets in southern Cameroon The combination of urban demand for bushmeat a multibillion-dollar business and greater access to primate habitats provided by logging roads has increased the amount of hunting in Africa, which has increased the frequency of human exposure to primate retroviruses and other disease-causing agents. Similarly, several*

outbreaks of Ebola virus in western Africa have been associated with consumption of bushmeat, mainly chimpanzees that were found dead. Traditional and local food markets in many parts of the world can be associated with emergence of new zoonotic diseases. Live animal markets, also known as wet markets, have always been the principal mode of commercialization of poultry and many other animal species. Such markets, quite uncommon in the United States and, until recently, in California, are emerging as a new mode of commercialization within specific ethnic groups for whom this type of trade assures freshness of the product but raises major public health concerns. The avian influenza epidemic, which began in Southeast Asia in and recently spread to other parts of the world, is directly related to infected birds sold live in traditional markets. Live bird markets facilitate the spread of this avian H5N1 virus by wild birds. However, recent data suggest that civets may be only amplifiers of a natural cycle involving trade and consumption of bats. Trichinellosis has long been associated with consumption of undercooked meat from wild animals, such as bears, and now consumption of uncooked meat from deer and wild boar has recently been associated with emergence of severe cases of hepatitis E in hunters in Japan. This type of travel increases the risk that tourists participating in activities such as safaris, tours, adventure sports, and extreme travel will contact pathogens uncommon in industrialized countries. Most patients are infected during wild game safaris and bush walks. Moreover, because ecotourism is becoming increasingly popular with international travelers, more cases of imported rickettsioses are likely to occur in Europe, North America, and elsewhere in years to come. Cercopithecine herpesvirus 1 herpes B virus is an alpha herpesvirus endemic to Asian macaques, which mostly carry this virus without overt signs of disease. However, zoonotic infection with herpes B virus in humans usually results in fatal encephalomyelitis or severe neurologic impairment. A survey of workers at a Balinese Hindu temple, a major tourist attraction where macaques roam free, showed that contact sufficient to transmit B virus occurred commonly between humans and macaques. Petting Zoos and Exotic Pets Petting zoos, where children are allowed to approach and feed captive wildlife and domestic animals, have been linked to several zoonotic outbreaks, including infections caused by *Escherichia coli* O H7, salmonellae, and *Coxiella burnetii*. More than 25 outbreaks of human infectious diseases associated with visitors to animal exhibits were identified during 1990-1999. In an outbreak of salmonellosis at a Colorado zoo, 65 cases most of them in children were associated with touching a wooden barrier around the Komodo dragon exhibit. *Salmonella* organisms were isolated from 39 case-patients, a Komodo dragon, and the wooden barrier. Children who did not become infected were more likely to have washed their hands after visiting the exhibit. Exposure to captive wild animals at circuses or zoos can also be a source of zoonotic infection. Twelve circus elephant handlers at an exotic animal farm in Illinois were infected with *M. tuberculosis*. Medical history and testing of the handlers indicated that the elephants had been a probable source of exposure for most of the infected persons. Exotic pets are also a source of several human infections that vary from severe monkeypox related to pet prairie dogs or lyssaviruses in pet bats to less severe but more common ringworm infections acquired from African pygmy hedgehogs or chinchillas. Epidemiologic and animal trace-back investigations confirmed that the first community-acquired cases of monkeypox in humans in the United States 71 cases resulted from contact with infected prairie dogs that had been housed or transported with African rodents imported from Ghana. Similarly, an outbreak caused by *Francisella tularensis* type B occurred among wild-caught, commercially traded prairie dogs; *F. tularensis* type B African pygmy hedgehogs have been implicated in human salmonellosis cases in the United States and Canada. The number of human cases of salmonellosis, especially in very young children, increased dramatically in parallel with iguana pet ownership. Most iguanas have a stable mixture of *Salmonella* serotypes in their intestinal tract and intermittently or continuously shed *Salmonella* organisms in their feces. Marmosets *Callithrix jacchus jacchus* were determined to be the source of exposure. These primates are common pets; most cases occurred in persons who had tried to capture them, and 1 case was transmitted by a pet marmoset. In 1996, encephalitis was diagnosed in an Egyptian rousette bat *Rousettus egyptiacus* that had been imported from Belgium and sold in a pet shop in southwestern France. The pet bat was infected with a Lagos bat lyssavirus and resulted in the treatment of exposed persons Y.

Chapter 2 : CiteSeerX " Exotic Viral Diseases

Blue Eye Disease (Paramyxovirus) Definition. Blue eye disease (BED) is the common name for a disease caused by a porcine rubulavirus (Paramyxoviridae; La Piedad Michoacan virus) that is characterized in nursing or growing pigs by central nervous system (CNS) signs and, frequently, by corneal opacities.

Considerable effort has been made to both prevent the introduction of Asian Bird Flu into the U. This has included participation and action by federal and state governments, the poultry industry, poultry trade groups, scientists, and public health officials. The most likely scenarios for introduction of Asian Bird Flu into the U. Movement of infected poultry or poultry products The importation of birds or bird products from the affected area has been banned or placed under strict control by the U. Virtually all of the chicken and turkey sold in the United States is produced in the United States. Movement by Wild Birds One of the unique features of the Asian Bird Flu is that wild birds can be infected, and increasing evidence suggests that they can spread the virus within and between countries. Control of wild bird movements, particularly migrating birds, is not possible. There exists some overlap of migrating birds from the infected countries and North American birds, but the risk of movement of the virus by this route is not known. Surveillance programs to test wild birds for Asian Bird Flu are ongoing and increasing to provide an early warning system whether wild birds pose a risk to the U. Purposeful or Agroterrorist Introduction The purposeful introduction of animal diseases remains a threat to our agricultural industry. Efforts for rapid detection and eradication, as outlined below, are one of our primary ways to mitigate any disease outbreak. Human Infection and Spread If Asian Bird Flu starts to infect large numbers of humans, then humans may pose a threat to infecting our poultry flocks with the virus. This scenario is unlikely at this time because the virus is poorly transmitted between people. Monitoring and surveillance for avian influenza, including Asian Bird Flu, is performed constantly at many different levels within the poultry industry. Many of these laboratories participate in the National Animal Health Laboratory Network, which provides testing for foreign animal diseases throughout the U. The policy of the poultry industry and state and federal governments is to eradicate avian influenza outbreaks as quickly as possible after detection. This is performed by the rapid detection of infected flocks and then the quarantine and ultimately the humane euthanasia of any flocks where virulent avian influenza virus has been identified. All birds are humanely euthanized according to AVMA standards and disposed of through environmentally sound methods. Additionally, the modern type of animal production used in the United States is actually more protective of birds, their health and well being than more traditional systems such as the free running village chickens in Asia. This protective status is due to improvements to poultry housing, selective breeding for disease resistance, protection from potential disease carriers such as wild birds and more importantly, continuous health oversight by poultry veterinarians. Preparedness is the key to a successful response to Asian Bird Flu or any other foreign animal disease in poultry. The USDA has recently invested in implementing improved rapid diagnostics for avian influenza, provided multiple training courses on diagnostics and control of avian influenza, and they have developed a vaccine bank to allow vaccination to be a control method if needed. Additional research and training are still required to adequately prepare for future outbreaks.

Chapter 3 : Exotic Pet Diseases | PetHelpful

Viral Diseases of Reptiles. By Stephen J. Divers, BVetMed, DZooMed, DACZM, DECZM (herpetology), FRCVS, Professor of Zoological Medicine, Department of Small Animal Medicine and Surgery, College of Veterinary Medicine, University of Georgia.

Viral diseases Beak and Feather Disease Beak and Feather Disease is caused by a virus which attacks the beaks and feathers of parrots. There is no cure for this disease, and it is spread through the feather dust and bodily fluids via inhalation, ingestion, or contact with open wounds. Infected birds may have abnormally formed feathers and beaks which get worse with each molt, or may have no symptoms at all. Affected birds often have additional bacterial or fungal infections as a result of the beak and feather abnormalities. Birds infected as babies usually die, while birds infected as adults may die, or become carriers and develop disease later in life. Beak and feather disease is diagnosed through samples of blood or damaged feathers. Birds are eventually euthanised due to the severity of the deformations produced by the disease. They can still be seen from time to time but are less common now that many birds are captive bred instead of wild caught. Both Herpes virus and Papillomavirus have been implicated as the cause for this disease, which is lifelong, and can have varying effects on the bird. In some birds the growths become large enough to block the normal function of the mouth or vent, and require surgical trimming. In some cases, papillomas can lead to cancers of the liver and pancreas, and eventually death. The disease is latent, meaning that the virus may be present for many years before signs of disease develop. The virus attacks nerves, especially those of the digestive system, so signs vary from vomiting and passing whole seed in the stools, to wobbling or seizures. There is currently no cure for PDD, so it is eventually fatal, but some medications may help improve quality and length of life. Polyoma Polyomavirus is very contagious and is most commonly a problem in breeding colonies, especially in budgies. Signs of this disease may include abnormal feathers, bruising, distended abdomen, or sudden death. It is spread via feather dust and bodily fluids which are aerosolized, thus it is very difficult to decontaminate the environment. There is no treatment, but a vaccine is available for prevention. This vaccine is usually recommended in baby birds, breeders, or those exposed frequently to other birds from outside the home e. It can cause respiratory disease and liver disease, so sick birds may have a variety of signs of illness ranging from sneezing, runny nose, eye discharge, and conjunctivitis, to diarrhea, yellow urates, vomiting, and lethargy. However, birds can be carriers of the disease and never show clinical signs. Psittacosis is spread through contact with body fluids from infected animals or people, but it is usually not fatal and is curable with antibiotics. Gram Negative Bacteria There are many steps to identify bacteria. Fungal Disease Yeast Yeast infections in birds most commonly affect the digestive system, and may overgrow due to a variety of conditions. Baby birds often get yeast infections of the crop or stool because they are fed warm, soft foods which are a perfect environment for yeast growth. Adult birds that dunk their food in water, or have a diet high in sugar may also get yeast infections. Birds who have yeast infections may or may not show signs of infections such as vomiting, scratching the beak, or diarrhea. These infections are usually easily treated with anti-fungal medications. Aspergillosis Normal healthy birds are not usually prone to aspergillosis; however individuals with weakened immune systems, such as those with nutritional deficiencies, are more susceptible. It is so common in the environment that it is impossible to completely eradicate. Aspergillosis most commonly causes respiratory disease, and is often not noticed until the pet is very sick. Common signs include sneezing, nasal discharge, general weakness, inability to tolerate exercise or handling, open mouth breathing, and increased breathing effort. Severely affected birds often need to be hospitalized. Blood tests can be done to confirm whether a bird has aspergillosis, but diagnosis is often difficult and may require endoscopy. Treatment is usually with liquid medications and nebulizations aerosol medication for several months. Some birds recover from aspergillosis, but many do not. Parasites Giardia and other protozoa Protozoa are microscopic parasites, which can cause diarrhea, malodorous stools, feather-picking, or even no signs at all. It is usually spread by oral contact with infected feces. In birds, flagyllated protozoans can be very difficult to clear completely, and may go away for some time, then return in times of stress. Although this can be a

frustrating infection, it is still important to treat it to keep your bird as healthy as possible. These mites burrow into and around the beak, and under the skin on legs, causing a spongy, scaly appearance. Treatment for both types of mites consists of a series of injections which kill the mites. Conclusion While not all diseases and treatments are included here, these are some of the most common ones. Contact your Chicago Exotics veterinarian if you have more questions or notice any unusual signs in your pet bird. Having your bird examined yearly by an avian veterinarian increases the likelihood of detecting any of these diseases early, before they become a severe condition for your bird. If you have any questions, give us a call at If you have any questions, please feel free to call us at

Chapter 4 : Exotic Viral Diseases: A Global Guide - Europe PMC Article - Europe PMC

Abstract. Marburg virus disease, Lassa fever, monkeypox, and Ebola virus diseases of humans have all been recognized since These are examples of some of the exotic virus diseases which through importation may present a potential public health problem in the United States.

African Swine Fever Definition A highly contagious, viral disease with signs, lesions and other features that closely resemble swine fever CSF. The disease is exotic to the US. At present, ASF does not occur in the western hemisphere. It is endemic in several African countries and an outbreak of the disease has been occurring across several countries in Central Asia since Distribution among countries changes, depending on new infections, re-infections and the success of eradication programs. Historical information African swine fever first was described in Africa in It soon was endemic in eight African countries. In , the disease occurred in Portugal, the first non-African country to be infected. In some countries, repeated outbreaks have discouraged eradication efforts. In many other countries, eradication efforts have been successful. Prohibiting importation of swine and pork from infected countries, and eliminating or regulating the practice of waste-food feeding to pigs are fundamental to most successful eradication programs. Several features of ASF, plus the high cost of eradication, make worldwide eradication unlikely. The United States has never experienced an outbreak although ASF has occurred several times in nearby Caribbean islands. Etiology Formerly classified as a member of the Iridoviridae, this DNA virus is currently the only member of a family called Asfarviridae. Strains vary markedly in virulence and no effective vaccines currently exist. It grows readily in several cell culture systems. ASF virus is exceptionally hardy in the environment but can be inactivated by many disinfectants. Epidemiology The virus often is introduced by feeding uncooked garbage containing scraps of infectious pork. ASF virus persists in pork for long periods of time. Once the virus is introduced, direct or indirect contact of healthy swine with it leads to outbreaks. Most outbreaks can be traced to contact with infected swine. African swine fever can be transmitted by direct contact with infected animals, indirect contact on fomites, and by tick vectors. Direct transmission usually is through oronasal secretions. In many endemically infected countries, several species of soft ticks predominantly genus *Ornithodoros* act as reservoirs and vectors. In Africa, a cycle of inapparent infection is established between ticks and wild boars, warthogs and bush pigs. ASF virus is passed transovarially in some ticks and persists in successive generations of ticks. Difficulty in eradication of ticks interferes with eradication of ASF. The United States has ticks with a similar potential. Pathogenesis The primary infection usually starts in the tonsils and mandibular lymph nodes. Virus then spreads in lymph and blood to secondary replication sites bone marrow, lung, spleen and kidney. A persistent viremia begins about one week after infection. The main target cells of the virus include monocytes, macrophages, cells of the reticuloendothelial RE system, endothelial cells, and platelets. Destruction of antigen processing cells in lymph nodes, spleen and bone marrow apparently interferes with formation of protective antibodies. Destruction of endothelial cells and vascular damage is responsible for hemorrhages, edema and transudate formation. The virus also causes a meningoencephalitis responsible for ataxia. The virus affects multiple organs of fetuses and causes fetal deaths. Clinical signs Clinical signs appear five to fifteen days after infection. Signs vary greatly, depending on the virulence of the virus, and can range from inapparent or subclinical to hyperacute with sudden death. Many initial outbreaks are acute and closely resemble outbreaks of acute CSF. In acute outbreaks, signs include anorexia, high temperatures, listlessness, incoordination, leukopenia, cutaneous hyperemia, hemorrhages on the skin especially on ears and flanks , and hyperpnea. Vomiting, diarrhea, dehydration and ocular discharge may occur. Death usually occurs in four to seven days. In subacute or chronic cases, signs include abnormal respiration, abortion and low mortality. Lesions The lesions are similar to those of CSF. There are petechial and ecchymotic hemorrhages at many sites skin, kidneys, lymph nodes, serosal and mucosal surfaces, epicardium, endocardium, larynx, bladder, gall bladder, lung , edema, hydrothorax, hydropericardium and ascites. The liver and spleen are congested. The spleen often is enlarged, friable, and may have infarcts. There often is congestion of meninges and brain. Lesions that are often present with ASF, but seldom with CSF, include hydrothorax, hydropericardium, ascites

and pulmonary edema. Hemorrhages and edema usually are more severe than with CSF. Gross lesions in chronic cases of ASF include fibrinous pericarditis and pleuritis, spleen and lymph node enlargement, caseous lobular consolidation of areas in the lungs, possibly with mineralization. Histologic lesions of ASF include meningoencephalitis, periportal hepatitis, extensive necrosis with karyorrhexis cell nucleus rupture in lymphoid tissues, and degeneration and necrosis of endothelial cells and cells of the mononuclear-phagocytic system. A hemadsorption test is widely used to identify the virus. Viral antigen can be identified in tissue by direct immunofluorescence on frozen sections and is widely used. Also, several techniques have been developed to identify ASF virus in paraffin-embedded tissue sections. Several tests are used to identify ASF antibody. These include indirect immunofluorescence, enzyme-linked immunosorbent assay ELISA, complement fixation CF, immunoblotting and radioimmunoassay. There is a sensitive dot immunobinding assay for field diagnosis. Control in most countries is limited to preventing entry of the ASF virus. Early diagnosis of suspected cases is important. If ASF should gain entrance, early quarantine and restriction of movement of animals in the area are important. Vaccines are unsatisfactory both for control of clinical signs and preventing infection. Massive amounts of virus are found in many tissues especially blood. Care must be taken when performing necropsies to prevent substantial environmental contamination. Cooperative international laws prohibit the importation of swine and pertinent food products from countries where ASF is endemic. Most countries prohibit the dumping of food wastes from planes and ships. Should outbreaks occur in the US, they probably will be handled by slaughter, followed by cremation or burial of infected pigs and pigs that had direct or indirect contact. Strict restriction of animal movement in the area, cleaning and disinfection of premises and the use of sentinel pigs prior to repopulation will also be necessary.

Blue Eye Disease Paramyxovirus Definition Blue eye disease BED is the common name for a disease caused by a porcine rubulavirus Paramyxoviridae; La Piedad Michoacan virus that is characterized in nursing or growing pigs by central nervous system CNS signs and, frequently, by corneal opacities. Signs in sows and boars include various forms of reproductive failure and corneal opacity. Occurrence Blue eye disease is only known to occur in swine. In Mexico, the only country that has reported cases, BED occurs throughout the year but is more common in the hotter, drier months March to July. Swine diseases caused by other paramyxoviruses have occurred in several countries Japan, Israel, Canada, United States, and Australia but the diseases they cause are sporadic, rare, and are distinctly different from BED manifesting as transient outbreaks of pneumonia, encephalitis, or reproductive disease. Historical information Blue eye disease first occurred in a large swine raising operation in central Mexico. Within a short time it had spread to eleven other states or districts and had become economically important. The first outbreaks occurred mainly in unweaned piglets less than 30 days old, frequently in piglets less than two weeks old. After, severe outbreaks occurred in larger pigs lb. Signs of reproductive failure were also observed in mature sows and boars. The scarcity of reports since suggest BED is less common now. Etiology The agent that causes BED is a paramyxovirus. It grows in chick embryos and hemagglutinates erythrocytes of mammalian and avian origin. It grows and causes cytopathic effect in PK and several other cell culture systems. It stimulates formation of inclusion bodies in PK cells. Formalin destroys infectivity of the virus. Antisera against seven paramyxoviruses and six parainfluenza viruses do not affect infectivity of the BED virus. This suggests BED virus differs from other paramyxoviruses and causes a unique disease in swine. Other paramyxoviruses are infrequent causes of swine pneumonia and encephalitis. Epidemiology Subclinically infected pigs are the main reservoir of virus. Virus can also be disseminated by people and vehicles. On farms with a continuous production system, virus persists and is maintained in new groups of susceptible young pigs while adult stock remains well. The disease is largely self-limiting in closed herds. Infected animals develop protective antibodies that usually persist throughout their lifetime. Pathogenesis Natural infection is thought to occur by inhalation based on experimental exposures where intratracheal and intranasal exposure reproduced the disease. The initial site of viral replication is unknown but may be in the nasal mucosa or tonsils. Virus soon spreads to the brain, lung and many other organs, suggesting that viremia occurs. Reproductive problems in dams suggest that the virus crosses the placenta and infects the fetuses. Corneal opacities blue eye sometimes occur late in the course of the disease. The opacities disappear spontaneously, presumably as inflammatory edema resolves. The

opacities are, perhaps, the result of an immunologic reaction accompanied by inflammation.

Chapter 5 : Asian Bird Flu : USDA ARS

Exotic Viral Disease: A Global Guide is written for the clinician, and deals with the epidemiology, signs, symptoms, and treatment of all unusual viral infections of man. The authors are among the leading opinion makers in the field of Geographic Medicine, and have collected a wealth of important, practical, and up-to-date information, which.

A monkey species known for transmitting hepatitis B. Source Facts about these diseases Herpes B virus- While the risk exists and should be acknowledged, infections of this viral disease from monkeys to humans are undeniably uncommon. The last transmission of this virus from a captive macaque monkey occurred at a federally-licensed research facility over 15 years ago. Humans are far more likely to give the Human herpes type 1 virus to pet monkeys. Rabies- Cats are the most common pet animals found with this virus notably those that are feral, free-roaming or unvaccinated. Rabies is contracted by outdoor exposure and free-roaming, which exotic pets, unlike many domesticated pets, are not allowed to do without supervision. No one has ever contracted rabies from an exotic pet in the U. Salmonella- A serious infection in the young and elderly, but not so much in most healthy individuals. Infection is commonly transmitted through improper handling of raw meat and eggs. Recommendations for Prevention of and Therapy for Exposure to B Virus Cercopithecine Herpesvirus 1 Source E-coli Escherichia coli - This gram-negative bacteria is carried by all warm-blooded animals including dogs, cats, humans, birds, ect. Infections usually result in temporary intestinal distress. Monkey Pox- A small outbreak occurred due to an exotic pet dealer housing an imported Gambian pouched rat in close proximity to prairie dogs who then also caught the disease , infected 70 pet owners. There were no fatalities as the disease is not as serious in nations with better healthcare, but this resulted in a ban on importing African rodents. Captive bred animals are still sold and no other issues have arisen. This disease is transmitted by primates in Africa, notably by the bushmeat trade. No issues with this disease have been recorded to be associated with the exotic pet trade, especially since the virus will rapidly kill its host. Source Hepatitis B- A virus that is mainly a risk to great apes gorillas, chimps, bonobos and gibbons. Primates can be screened and vaccinated. Hantavirus- This disease is mainly a concern with wild rodents, not captive-bred animals, and these are specific species of mice. Tuberculosis- This disease is a threat to mainly old world monkeys and elephants but is a debilitating illness that will prove fatal to the animals. TB tests are available and should be given annually for pet primates. Upon reviewing the research that advocates against exotic pet keeping due to disease transmission, I noticed that much of the zoonotic disease statistics came from petting zoos--that of which hold animals that are not only domesticated, but are common and harmless animals that we often even consume as food. Domesticated farm animals are not exotic pets. They obviously pose a disease risk, which is why they are not kept in congested environments like cities, but it is rather preposterous that the health conflicts of every animal other than dogs and cats receive so much attention. However, many studies also point to the health benefits of being raised on farms and around animals. Animals kept in nature centers, zoos, and other educational facilities are not being attacked by the public as being negative for society even though they are included in these cited studies as a major source of the infection incidents. Advice for avoiding zoonotic disease infections ALL species Do not keep or buy wild-caught or imported warm-blooded animals unless you are qualified Wash your hands thoroughly after contact with fecal matter or surfaces that may be contaminated with such at least 20 seconds. This is especially important with reptiles. Maintain a clean and organized environment. Learn proper disinfection procedures. Avoid reptile contact with very young children, sick people, or the elderly and if they do handle a reptile, follow the 2nd procedure. Research the appropriate vaccinations for your pet. One may think unusual animals host the potential to start pandemics and epidemics to the level of fictional movies such as depicted in Contagion the film. The best argument made by special interest groups those that would really just prefer to end the practice of keeping all pets is that exotic pets may introduce diseases that are unique toward the population and therefore will be harder to deal with. Yet, despite this proposition, There have only been a handful of incidences involving exotic pets and uncommon or potentially serious disease causation. The small monkey pox outbreak was one of them, and is an example often cited by exotic pet trade detractors. Do these small pets arouse attention from the public as

often as less common or more intimidating pets? Special interest groups mainly have a priority in banning non-human primates, big cats, and other uncommon exotic pets because they have ideological objections toward people keeping them in captivity. They are a convenient scapegoat because people do not understand why we desire to have them. Snakes have always garnered unwarranted fear from many throughout history. Phobias of snakes Ophidiophobia are extremely popular. Source Therefore, any one incident regarding an unusual animal will equate to about 50 incidences. If a cat bites someone, it is pathetically uninteresting and un-newsworthy. With fear and anger toward this group of pet owners due to several misrepresentations of their hobby and lifestyle, it would seem that this should be enough disdainful public sentiment to impose restrictions and bans on this minority group of people. In contrast to the hype about the danger of exotic pets, many provide therapeutic value and have health benefits for their owners and other people not unlike dogs and cats, which this Animal Planet show used to depict before turning to programs like Fatal Attractions. Part of a series investigating the complex links between human, animal and environmental health: Factually incorrect or misrepresented? It is not meant to substitute for diagnosis, prognosis, treatment, prescription, or formal and individualized advice from a veterinary medical professional. Animals exhibiting signs and symptoms of distress should be seen by a veterinarian immediately.

Chapter 6 : Exotic viral diseases. - Abstract - Europe PMC

Exotic Viral Diseases: A Global Guide by Berger et al. is a small, soft-cover, page handbook organized by disease or disease group. It addresses 55 viral pathogens, including a few broad groupings, such as "New World hantaviruses."

Bird flu Bird flu, or avian influenza, occurs naturally in wild birds and can be contracted by poultry and other domestic birds, as well as by humans. The most deadly variety of the disease is caused by influenza virus H5N1, which is transmitted to humans from infected birds. However, H5N1 could evolve into a strain that is capable of sustained human-to-human transmission. If that were to happen, it could lead to a deadly pandemic. For now, H5N1 continues to be spread mainly through the sale and distribution of poultry. Bird flu produces a variety of symptoms in humans, from those that resemble conjunctivitis or influenza to those indicative of pneumonia, respiratory failure, or acute respiratory distress, which can be fatal. From to , more than human cases of bird flu were reported, about 60 percent of which ended in death.

Sleeping sickness Tsetse fly *Glossina brevipalpis*. Sleeping sickness, or African trypanosomiasis, is caused by infection with the protozoan *Trypanosoma brucei gambiense*, which is found in West and Central Africa, or the closely related subspecies *T. brucei rhodesiense*. Past changes in the geographic distribution of tsetse flies, which transmit the protozoans to humans and which are highly responsive to shifts in environmental temperature, led to severe epidemics. Scientists have predicted that over the next century, climate warming could result in significant range shifts for *T. brucei*. An estimated 30 million people are thought to be affected by sleeping sickness, though as many as 70 million may be at risk. Characterized by a long and sometimes asymptomatic first stage, the protozoans eventually cross the blood-brain barrier, leading to confusion, loss of coordination, and sleep cycle disturbance. If left untreated, infected individuals will die.

Crimean-Congo hemorrhagic fever Crimean-Congo hemorrhagic fever is a tickborne disease of ruminants that can be transmitted to humans. It was first discovered in Crimea in 1944, and then in the Congo in 1956. The northern geographic boundary of Crimean-Congo hemorrhagic fever is marked by cold, mountainous areas, which limit the range of *Hyalomma* ticks, the major vectors of the disease. Predicted climate scenarios suggest, however, that warmer conditions could allow the ticks to invade new areas, thereby expanding the already wide distribution of this deadly disease, which kills between 10 and 40 percent of those who become infected. Symptoms progress from fever and headache to vomiting and abdominal pain to confusion and sleepiness. Sudden liver or pulmonary failure and kidney deterioration can result in death.

Chikungunya fever *Aedes aegypti* mosquito *Aedes aegypti* mosquito, a carrier of yellow fever and dengue. Several years later, the disease emerged in Southeast Asia, and in the early 1950s it was detected on islands in the western Indian Ocean. In 1952 it appeared for the first time in Europe, causing illness in more than 100 people in Ravenna, Italy. The virus likely was carried to Ravenna by a person who had recently visited an affected area of India. Although rarely life-threatening, chikungunya fever can cause severe joint and muscle pain.

Triatoma infestans *Triatoma infestans*, a vector for Chagas disease. But increased migration of infected people into urban areas in Mexico and Central and South America—as well as into the United States and other countries, particularly those in Europe—has facilitated the spread of the disease. Other means of transmission include blood transfusion, placental transmission, or consumption of contaminated food. Chagas disease affects between seven million and eight million people worldwide. And while many of those people may experience no or only mild symptoms, such as headache and swollen lymph glands, others, particularly those who do not receive treatment, experience chronic infection. In the chronic state, the parasites become permanent residents of the heart and digestive muscles, leading to the progressive deterioration of those tissues. In the following years, it spread across much of the country and into Canada and the Caribbean. In 1975 it was responsible for 88 American deaths, out of 2,000 reported cases, and its prevalence was expected to grow, as climate change models predicted a lengthening of the mosquito carrier season across many areas. The strain of West Nile virus that emerged in the United States matched a virus that had been circulating in Israel and Tunisia. Although asymptomatic in most people, about 20 percent of those who are infected develop flu-like symptoms and less than one percent develop severe neurologic illness, sometimes leading to permanent cognitive and motor deficits or even death.

Chapter 7 : Exotic viral diseases | Iowa State University

If the exotic invaders on this list haven't appeared yet in a town near you, they may do so soon, courtesy of increased human travel and climate change—two factors thought to play a major role in the spread of infectious agents and the animals that carry them.

Transmission occurs by exposure to faecal and other excretions from infected birds, and through contact with contaminated food, water, equipment, and clothing. Strains[edit] NDV strains can be categorised as velogenic highly virulent , mesogenic intermediate virulence or lentogenic nonvirulent. Lentogenic strains produce mild signs with negligible mortality. Use as an anticancer agent[edit] In , promising results were reported using an attenuated strain of the Newcastle virus, code named MTH, in cancer patients [4] by researchers who had isolated the strain in The researchers suggested in cells that resist the normal inducement of apoptosis when infected will give NDV more time to incubate in cell and spread. Many cancer cells will overexpress antiapoptotic factors as part of tumor development. This mechanism of delaying apoptosis in abnormal cells gives NDV the specificity it needs to be an efficient cancer fighting oncolytic virus. Promising results were discovered with proteins associated to the adaptive immune system, which paved the way for possibilities to use NDV to create a tumor-associated antigen. NDV has selectivity on oncogenic cells, where it replicates without, or in a less pronounced way, harming normal cells. The results [12] also indicate the extrinsic pathway is activated by TNF-related, apoptosis-inducing ligand-induced, NDV-mediated apoptosis in a late stage. NDV has aggregating properties causing syncytia formations of tumor cells, which, apart from amplifying immune-based cell killing, also results in necrosis of cells. NDV spreads rapidly among birds kept in confinement, such as commercially raised chickens. Virus-bearing material can be picked up on shoes and clothing and carried from an infected flock to a healthy one. It can survive indefinitely in frozen material. However, the virus is destroyed rapidly by dehydration and by the ultraviolet rays in sunlight. Amazon parrots are carriers of the disease, but do not show symptoms, and are capable of shedding NDV for more than days. Clinical signs[edit] Egg drop after a otherwise asymptomatic Newcastle disease infection in a duly vaccinated broiler parent flock Signs of infection with NDV vary greatly depending on factors such as the strain of virus and the health, age and species of the host. The incubation period for the disease ranges from 4 to 6 days. An infected bird may exhibit several signs, including respiratory signs gasping, coughing , nervous signs depression, inappetence, muscular tremors, drooping wings, twisting of head and neck, circling, complete paralysis , swelling of the tissues around the eyes and neck, greenish, watery diarrhea, misshapen, rough- or thin-shelled eggs and reduced egg production. In acute cases, the death is very sudden, and, in the beginning of the outbreak, the remaining birds do not seem to be sick. In flocks with good immunity, however, the signs respiratory and digestive are mild and progressive, and are followed after seven days by nervous symptoms, especially twisted heads. Same symptom in a broiler PM lesions on proventriculus, gizzard and duodenum Postmortem lesions[edit] Petechiae in the proventriculus and on the submucosae of the gizzard are typical; there is also severe enteritis of the duodenum. The lesions are scarce in hyperacute cases first day of outbreak.

Chapter 8 : Newcastle disease - Wikipedia

Viral Diseases of Rabbits. By Joerg Mayer, DMV, MSc, DABVP (ECM), DECZM (Small mammal), Associate Professor of Zoological and Exotic Animal Medicine, Department of Small Animal Medicine & Surgery, College of Veterinary Medicine, The University of Georgia.

Collection Notifiable diseases in animals A collection of guides to notifiable diseases in animals, including what happens if a disease is suspected or confirmed. Published 26 August Last updated 23 October “ see all updates From: Notifiable diseases can be: If you suspect a notifiable animal disease you must report it immediately by calling the Defra Rural Services Helpline on In Wales, contact In Scotland, contact your local Field Services Office. Failure to do so is an offence. What happens if you suspect a notifiable disease If you suspect an exotic notifiable disease: Report it by calling the Defra Rural Services Helpline on APHA vets will investigate “ they usually visit your premises and carry out an enquiry. If the APHA veterinary inspector suspects a notifiable disease, they will take samples for testing this may involve killing the suspected animal before taking samples. They put restrictions on your premises. This means you must at least stop moving animals susceptible to the disease on or off the premises. It can also include stopping the movement of anything that can transmit disease, like meat products, equipment or vehicles. If certain diseases are suspected particularly foot and mouth disease or African horse sickness a temporary control zone will be introduced around your premises. This restricts the movements of animals susceptible to the disease. Restrictions remain in place until the investigation is complete and an exotic notifiable disease is ruled out. What happens if a notifiable disease is confirmed If a notifiable disease is confirmed: Action will be taken on the infected premises to reduce the risk of the disease spreading, including movement restrictions. For some diseases, like foot and mouth disease and African swine fever, this will include culling all susceptible animals. Premises are then cleaned and disinfected with strict rules on restocking. The government investigates where the disease came from and whether it has spread. The government puts restrictions on all premises where the disease is likely to have spread from or to for example when animals have been moved. Further restrictions in a wider area may be introduced, depending on the risk of the disease spreading. In the case of foot and mouth disease in particular, animal movements would be restricted throughout the country. For some diseases control zones are automatically applied. APHA will tell you what action to take “ this depends on the nature of the disease and EU requirements. The following activities that could spread disease may be banned:

Chapter 9 : Exotic viral diseases.

A zoonotic disease is an infectious disease that can be transmitted from animals to humans. Therefore unsurprisingly, a common mode of transmission is through the pet trade where humans contact animals.