

One Health News Bits

5-15-13

Subtle changes in prions may have big ramifications

Prions make subtle changes that allow them to mirror new strains they encounter, a process called adaptation, potentially allowing the pathogenic proteins to spread to a new species, according to recently published research. "We want to determine why one prion disease might be able to spread from one type of animal to another and why another strain of the disease can't," said lead researcher and neurologist Valerie Sim. In the case of chronic wasting disease, researchers hope to determine whether prions passed from deer to other animals via contaminated soil can evolve to infect additional species. (3/11) *Acquired from Animal Health Smartbrief.*

<http://www.sciencedaily.com/releases/2013/03/130311124205.htm>

Frogs pinpointed as a source of widespread Salmonella outbreak

CDC investigators found that African dwarf frogs are the source of a Salmonella outbreak that involved 376 people, mostly children, across 44 states, resulting in hospitalization in 29% of cases. This is the first time amphibians have been linked to a nationwide Salmonella outbreak. "Amphibians and reptiles should never be kept in homes with children less than 5 years old or with people who have immune deficiencies," said lead researcher and CDC official Shauna Mettee Zarecki. Blue Lobster Farms, a California breeding facility, has been identified as the source of the implicated amphibians. (3/11) *Acquired from Animal Health Smartbrief.*

<http://thechart.blogs.cnn.com/2013/03/11/pet-frogs-carrying-salmonella-make-kids-sick/>

Owners beware: poisoning from this rodenticide is tough to treat

Pet owners using rodenticides should be aware that cats and dogs are susceptible to the products' poison, and veterinarians fear an increase in bromethalin toxicity in pets because of a ban on brodifacoum. Bromethalin is the active ingredient in Assault, Fastrac, Gladiator, Rampage, Talpirid and Vengeance, and it causes brain and spinal cord swelling characterized by weakness, incoordination, seizures, paralysis and death. There is no definitive diagnostic test and no antidote, note veterinarians Lee Pickett and Jennifer Coates. Supportive treatments are available but they are intensive, and animals that survive are often left with neurological deficits. (3/12) *Acquired from Animal Health Smartbrief.*

http://www.petmd.com/blogs/fullyvetted/2013/march/risks-of-rodenticides-changing-for-pets#.UUsv_RxOSSp

New rabies vaccine could reduce cost, risk

Researchers at the University of Georgia College of Veterinary Medicine are building a new vaccine to protect both people and animals from the rabies virus. They hope the new treatment will reduce costs and increase accessibility to a vaccine for a disease that still kills 55,000 people a year. Dr. Biao He and his team are using parainfluenza virus 5, a virus that causes respiratory infection in dogs but is harmless to people, as a vector to deliver the rabies virus. So far, results from both mouse and canine tests show that the new type of rabies vaccine may be more effective and will require less of the drug to create resistance to rabies. (2/19) *Acquired from AVMA Health News Bytes.*

<http://news.uga.edu/releases/article/new-rabies-vaccine-could-reduce-cost-risk/>

White-nose syndrome surfaces in 2 more Southern states

Officials in Georgia and South Carolina confirmed the states' first cases of the deadly white-nose syndrome in bat caves. The fungal infection first identified in upstate New York in 2006 has now been found in 22 states and killed an estimated 5.4 million bats, according to the U.S. Fish and Wildlife Service. There is no treatment for the disease, which is expected to continue moving across the nation. (3/12) *Acquired from Animal Health Smartbrief.*

<http://www.usatoday.com/story/tech/sciencefair/2013/03/12/white-nose-georgia/1982075/>

Maryland Reports 1st human rabies death in 37 years

It's not clear how a Maryland resident contracted rabies, but the case marks the state's first death from the virus since 1976 and is one of a handful nationwide in the past decade.

Some 1,000 people in Maryland are given preventive treatment for the virus annually, said state public health veterinarian Katherine Feldman. "It's important to report any animal bite," Dr. Feldman said. (3/12) *Acquired from Animal Health Smartbrief.*

<http://www.baltimoresun.com/health/bs-md-rabies-death-20130312,0,1434749.story>

Wildlife trade claims a growing number of species

Mantas are among a growing number of animals in trouble amid high trade demand that is ensnaring a broadening range of species. Mantas, as well as five shark species, have gained preliminary approval for tougher international trade restrictions, but the move is no guarantee of safety, experts say. "We're struggling to keep pace with the sheer scale of the problem," said Colman O'Criodain, a wildlife trade policy analyst with WWF International.

(3/12) *Acquired from Animal Health Smartbrief.*

http://www.nytimes.com/2013/03/12/world/asia/no-species-is-safe-from-burgeoning-wildlife-trade.html?_r=0

Dead pig scandal in Chinese river expands to more than 13,000 carcasses

More than a week since authorities in Shanghai started pulling thousands of dead pigs from one of the city's major waterways, the Huangpu River, municipal authorities in that city of 23 million are continuing to pull hundreds of carcasses from its waterways each day, bringing the total since last week to over 13,000. Workers on Sunday pulled nearly 500 pigs from the Huangpu, bringing the total found from that river alone to over 9,500. The Huangpu River supplies over a fifth of Shanghai's drinking water. (3/18)

<http://behindthewall.nbcnews.com/news/2013/03/18/17357810-china-rivers-dead-pig-toll-passes-13000-but-officials-say-water-quality-is-normal?lite>

Update: Wolves move in as health issues plague struggling Minn. Moose

The first messages from dead moose to Minnesota researchers have been coming in, and early results show wolves are taking their toll on the state's beleaguered moose herd despite an easy winter. Minnesota wildlife researchers trapped 111 moose in January and February and placed GPS trackers and transmitters on the big animals. (3/18) *Acquired from Animal Health Smartbrief.*

http://www.duluthnewstribune.com/event/article/id/261763/publisher_ID/36/

Species richness alone doesn't limit zoonoses, study says

The dilution effect, a commonly held belief that the risk of animal-to-human disease transmission is lower in areas where there are more species, doesn't appear to be supported by scientific evidence, according to new research. The meta-analysis finds the relationship between zoonoses and species richness is complex, variable and dependent on myriad factors, and more research is needed. The authors note that advocating for

biodiversity using the dilution effect represents "an oversimplification of disease ecology and epidemiology." (3/20) *Acquired from Animal Health Smartbrief.*
<http://www.sciencedaily.com/releases/2013/03/130320142756.htm>

The real coronavirus question: What else is out there?

The SARS outbreak cast a spotlight on the public health implications of zoonotic diseases, and the discovery of a new coronavirus underscores those lessons. "Animal health gets just a fraction of the resources that human health does, which is why we are rarely able to detect new viruses before it's too late and they've already crossed the species barrier," writes Bryan Walsh. However, in recent years, more work has focused on emerging diseases. "If you start looking around, you'd find hundreds of thousands of unknown viruses waiting to be discovered," says Peter Daszak, president of the EcoHealth Alliance. "Most will be harmless -- but some will be lethal." (3/19) *Acquired from Animal Health Smartbrief.*
<http://science.time.com/2013/03/19/after-sars-a-new-virus-in-saudi-arabia-underscores-the-need-to-police-disease-in-animals/>

Could transplant guidelines have saved man who died from rabies?

Transplant safety guidelines came nine months too late for four patients who received organs from a donor with rabies. The donor was thought to have died from a toxin, but after one of the transplant patients died last month, rabies was identified as the cause of the donor's death. The United Network for Organ Sharing recently released transplant guidelines calling for extreme caution when recovering organs from people, such as the donor, who die of what appears to be viral encephalitis. Some think it took too long for the recommendations to be formulated, but committee members say they were thorough and addressed more common diseases first.

(3/24) *Acquired from Animal Health*

SmartBrief.<http://www.utsandiego.com/news/2013/mar/24/transplant-guidelines-too-late-for-rabies-victim/?ap>

Texas lab investigates missing zoonotic virus

Last week, lab workers at the University of Texas Medical Branch reported a missing vial of Guanarito virus, which causes the potentially deadly illness known as Venezuelan hemorrhagic fever. The disease caused 618 human illnesses in Venezuela between 1989 and 2006 and is transmitted from certain rodents to humans via aerosol inhalation. Officials think the vial was not stolen but instead was misplaced and likely destroyed during routine lab procedures, but they are investigating. (3/25) *Acquired from Animal Health SmartBrief.*

<http://www.inquisitr.com/588096/vial-of-potentially-deadly-virus-missing-from-texas-lab/>

New vaccine offers hope for avian influenza while limiting chance of reassortment

A new vaccine has been proven highly effective against the virus when tested in both mice and ferrets, as well as against the H9 subtype of avian influenza. The strength of the new vaccine is that it uses attenuated, rather than "killed" virus. The danger of current attenuated virus vaccines is that they might exchange dangerous genetic material with garden variety influenza viruses of the sort that strike annually, potentially rendering a lethal but very hard to transmit influenza virus, such as H5, easily transmissible among humans. (3/26) *Acquired from Animal Health SmartBrief.*

<http://in.news.yahoo.com/cleverly-designed-vaccine-could-help-block-deadly-h5-070326653.html>

How animal idioms express human wisdom

Animals and human beings have shared this planet as their home for ages. Human civilization is inextricably linked to animal life. Our language reflects this link. Included are some animal idioms with a common structure comprising two nouns and a preposition. (3/25) *Acquired from Animal Health SmartBrief.*

<http://www.livemint.com/Opinion/hXet5QI310bZLjyowOlqpK/Furry-wisdom-Popular-animal-idioms.html>

The human-animal connection benefits people of all stripes

It is well known that good health has been linked to a lifestyle involving pets. Rebecca Johnson, president of the International Association of Human-Animal Interaction Organizations (IAHAIO) has discussed some of these associations. IAHAIO is an umbrella organization that is currently doing research to better understand human/animal relationships. (3/13) *Acquired from Animal Health SmartBrief.*

<http://www.chicagotribune.com/classified/realestate/sns-201303121100--tms--petwrldctnya-b20130313-20130313,0,2065117.column>

One health: AVMA highlights connectedness in our world

In this Petcast, Steve Dale speaks with One Health Commission CEO Dr. Roger Mahr, of St. Charles, IL, past president of the AVMA, and Vallie Szymanski, co-founder and executive director of Ovarian Cancer Symptom Awareness to discuss the links between human and animal health as recognition and prevention of emerging diseases become important factors of the human/animal bond. (3/5) *Acquired from Animal Health SmartBrief.*

<http://www.chicagonow.com/steve-dales-pet-world/2013/03/one-health-people-and-pets-integrative-medicine/>

Study assesses routes of TB transmission between cattle, badgers

Badgers carrying bovine tuberculosis are a source of infection for cattle in England, but new research suggests direct contact is not the primary means of transmission. Veterinarian Julian Drewe and his team from the Royal Veterinary College found that direct contact occurred in only four of every 500,000 interactions. "This clearly has disease management implications, and more work is now needed in this area to look at how such contact can be limited, to reduce the number of cases of bovine TB in the future," said Dr. Drewe. (3/28) *Acquired from Animal Health SmartBrief.*

<http://phys.org/news/2013-03-cattle-badgers-tb-rarely.html>

Cat attacks woman in Texas tests positive for rabies

<http://www.kcentv.com/story/21811264/cat-attacks-woman-tests-positive-for-rabies-in>

A cat has now tested positive for rabies in Waco. This is the fourth animal to test positive for rabies this year in McLennan County. On March 24, officials responded to a call about a cat bite at a home in the 3700 block of South 3rd Street. The victim had tried to pick up a feral cat that was in her yard and was with her animals. When she approached the cat, it became very aggressive and then bit and scratched the woman. (3/27) *Acquired from Animal Health SmartBrief.*

Veterinary medicine and "One Health"

Veterinarians play critical roles in animal and human health, but these roles are often overlooked or unrecognized. AVMA's Aardvarks to Zebras website helps explain the role that veterinarians play in "One Health," which is the intersection of animal, human

and ecosystem health. Get the latest One Health news from around the world, highlighting veterinary medicine and its impact on human and environmental health, from [AVMA's Aardvarks to Zebras website](#). (3/29) *Acquired from Animal Health SmartBrief*.

http://www.aardvarks2zebras.org/?utm_source=smartbrief&utm_medium=email

Comparative Research One Health News Bits

Turtle genome may help human heart and stroke patients

Scientists have unraveled the western painted turtle genome, marking the first ever turtle genome sequenced and only the second one for a reptile. The information may one day help human stroke and heart attack patients because the turtles have an uncanny ability to survive for extended periods of time without oxygen with no detrimental effects. (4/3) *Acquired from Animal Health Smartbrief*.

<http://www.sciencedaily.com/releases/2013/04/130403154034.htm>

Modified poultry virus could help treat prostate cancer

Researchers at the Virginia-Maryland Regional College of Veterinary Medicine developed an injectable recombinant form of Newcastle disease, a poultry virus, that kills human prostate cancer cells without harming healthy tissue. An estimated 238,590 cases of prostate cancer will be diagnosed among U.S. men this year, and 29,720 patients are expected to die of the disease, according to the American Cancer Society. Newcastle disease does not pose a threat to humans, but it is of serious economic concern in the poultry industry. (4/9) *Acquired from Animal Health Smartbrief*.

<http://www.vtnews.vt.edu/articles/2013/04/040813-vetmed-prostatecancer.html>

Sequencing of swine genome may advance human health

Collaborators from around the world, including a Kansas State University College of Veterinary Medicine researcher, are bringing home the bacon when it comes to potential animal and human health advancements, thanks to their successful mapping of the domestic pig genome. Among other discoveries, the research reveals that pigs share some of the same protein abnormalities as people who have diabetes, dyslexia, Parkinson's disease and Alzheimer's disease. K-State's Dr. Frank Blecha, a member of the research team, says the mapping of the swine genome moves agricultural and biomedical science forward for the good of everyone, possibly leading to improved health across all species. (11/16/12) *Acquired from AVMA Health News Bytes*.

<http://www.k-state.edu/today/announcement.php?id=6026>

Surgical skin patch modeled after fish parasite

Researchers at Brigham and Women's Hospital have developed a patch for skin wounds modeled after the fish parasite *Pomphorhynchus laevis*' ability to securely cling to wet surfaces using tiny spikes that swell after entering tissue. The researchers mimicked this design, creating a skin patch that features miniscule plastic needles that cause minimal tissue damage upon entry yet swell when wet to create a tight grip.

(4/17) Acquired by Animal Health Smartbrief <http://www.bbc.co.uk/news/health-22164451>

Scientists engineer sheep that glow under UV light

Scientists in Uruguay implanted *Aequorea victoria* jellyfish genes into sheep embryos, creating sheep that glow under ultraviolet light. "Our focus is generating knowledge and making it public so the scientific community can be informed and help in the long-run march to generate tools so humans can live better," said lead researcher Alejo Menchaca. Monkeys and cats are among other species that have been successfully implanted with glow genes. (4/29) Acquired from Animal Health Smartbrief.

http://www.theregister.co.uk/2013/04/29/glow_sheep_uruguay/

Removing 1 of many olfactory genes can alter sense of smell

Scientists recently found that interrupting just one olfactory gene can have consequences for survival in mice, a finding that also sheds light on how the human sense of smell works. Mice who lacked a gene for smelling amines, compounds found in cat urine and decaying tissues, did not display aversive behavior when they encountered predator scent marks. Humans detect amines in spoiled food. Experts said the finding was unexpected: "The general consensus in the field is that removing a single olfactory receptor gene would not have a significant effect on odor perception," said study co-author and neurobiologist Thomas Bozza. (4/29) Acquired from Animal Health Smartbrief. <http://www.sciencedaily.com/releases/2013/04/130429154115.htm>