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# Impact of Rabies on Horses and Other Livestock- A Practice Management Approach

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# New Mexico Horse Tests Positive for Rabies

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“The New Mexico Department of Health announced **August 18<sup>th</sup>, 2011** that an unvaccinated New Mexico horse contracted rabies.”

# The History of Rabies:



One of the oldest documented diseases

It dates back to Roman/Greek  
Biblical times

# The History of Rabies (cont.)

- Scientific Discovery
  - Louis Pasteur - 1880's
  - 1<sup>st</sup> scientific approach to the disease
  - 1<sup>st</sup> successful vaccination of a dog
  - 1<sup>st</sup> successful prophylactic treatment of rabies in a human

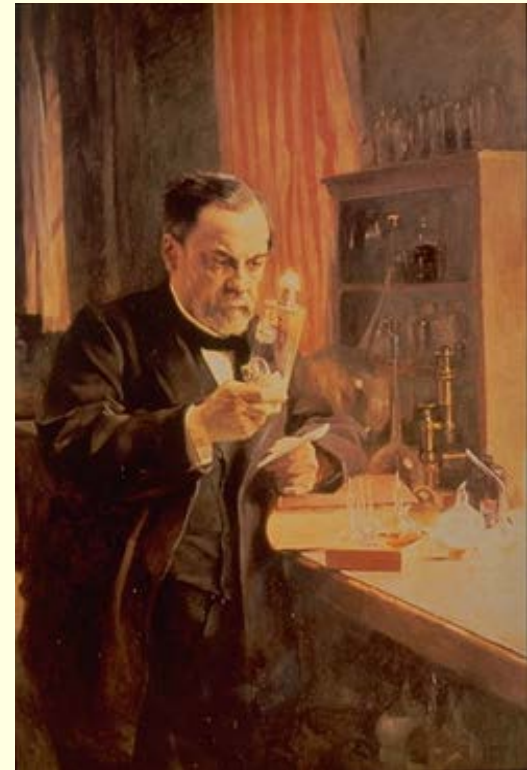




Photo- Dr Heather Sutton

# Clinical Signs in general:

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- No clinical signs are observed until the virus enters the CNS
- Three distinct phases may be observed
  - Prodromal- subtle behavior changes
    - Friendly ← or → Aggressive
  - Excitatory or Furious- Classic Signs
  - Paralytic or Dumb
    - Progressive paralysis, unable to swallow
- Phases may overlap!
- Timing of phases cannot be predicted

# Some clinical signs that can be present in the horse:

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- Depression, loss of appetite (anorexia)
- Fever, muscle tremors, sweating
- Lameness, ataxia, paresis, recumbency +/- paddling
- Other neurological symptoms, including convulsions
- Increased sensitivity to being touched
- Loss of tail/anal tone, hind leg sensation
- Abdominal pain or colic (straining to urinate or defecate)
- Swallowing problems and drooling
- Odd behavioral changes = nervousness, irritability, aggression, abnormal vocalization, self mutilation

Orsini, JA. Divers, TJ. *Manual of Equine Emergencies: Treatment and Procedures*. 2<sup>nd</sup> ed. Philadelphia, PA. Saunders, 2003:415

# Equine Neurologic Differential Diagnoses:

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- Metabolic – **colic**, hepatoencephalopathy
- Genetic – HYPP, PSSM (polysaccharide storage myopathy)
- Toxin/plant related
- Trauma to the head/CNS
- Infections- EEE, WEE, West Nile, EHV1, Tetanus, Botulism, RABIES
- This list is not all inclusive!

Orsini, JA. Divers, TJ. *Manual of Equine Emergencies: Treatment and Procedures*. 2<sup>nd</sup> ed. Philadelphia, PA. Saunders, 2003:415

# Clinical Signs in the Cow:

- Cows typically develop a hoarse bellow. <sup>1</sup>
- Drooling and abnormal swallowing may make them appear to have something caught in their throats. <sup>1</sup>
- Some animals may only show depression and weakness, or partial paralysis, of the hindquarters. <sup>1</sup>
- During the course of several hours to a few days, the animal will go down, develop convulsive seizures, and die. <sup>1</sup>
  
- **ANY RUMINANT SHOWING SIGNS SHOULD BE CONSIDERED A RABIES SUSPECT UNTIL PROVEN OTHERWISE.** <sup>2</sup>

1) The Ohio University Extension website: [ohioline.ag.ohio-state.edu](http://ohioline.ag.ohio-state.edu)

2) Valberg, S. *Large Animal Neurologic Diseases (CVM 6440) notes*. September 2001  
[http://www.cvm.umn.edu/Academics/Current\\_student/Notes/neuro99notes.pdf](http://www.cvm.umn.edu/Academics/Current_student/Notes/neuro99notes.pdf)

# Bovine Diffuse Neurologic Differential Diagnoses:

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- The most common diffuse CNS diseases in cattle include:
  - Rabies
  - Polioencephalomalacia
  - Lead poisoning
  - Thrombotic meningoencephalitis (TEME)
  - Listeriosis
  - Nervous ketosis
  - Nervous coccidiosis
  - Hypovitaminosis A
  - Trauma - Cranial / CNS
  
- They have similar clinical presentations, and they may be seen in similar clinical surroundings. Rabies, polioencephalomalacia, listeriosis, lead poisoning and TEME may be easily confused and may be seen in dairy or feedlot settings. In dairy practice, nervous ketosis must also be considered as a differential diagnosis.

# Clinical Signs in Small Ruminants:

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- Sheep have symptoms similar to cattle, and sometimes vigorously pull their wool.
- The disease is often seen in more than one sheep in a flock because the animals stay close together and several can be easily bitten at one time.
- Goats with rabies are often aggressive and bleat continuously.

The Ohio University Extension website: [ohioline.ag.ohio-state.edu](http://ohioline.ag.ohio-state.edu)

# Differential List of Neurological Diseases of Sheep:

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- Bacterial meningitis
- Polioencephalomalacia
- Listeriosis
- Enterotoxemia
- Rabies
- Tetanus
- This list is not all inclusive!



Valberg, S. *Large Animal Neurologic Diseases (CVM 6440) notes*. September 2001  
[http://www.cvm.umn.edu/Academics/Current\\_student/Notes/neuro99notes.pdf](http://www.cvm.umn.edu/Academics/Current_student/Notes/neuro99notes.pdf)

# Clinical Signs in the Pig:

- Pigs with rabies tend to act excited and uncoordinated.
- Some animals will chew rapidly, salivate, and convulse.
- Paralysis eventually occurs and death follows in 12 to 48 hours.
- Must differentiate from Pseudorabies

The Ohio University Extension  
website: [ohioline.ag.ohio-state.edu](http://ohioline.ag.ohio-state.edu)



# Rabies or Not?!

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# Historical livestock vaccination recommendations:

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- Generally, production animals, such as dairy cow herds and sheep flocks, are not vaccinated because the potential risks are usually lower than the annual costs of vaccination and because human contact with individual animals is low.
- Small groups of valuable purebred animals may be an exception.
- Horses that travel should be vaccinated.

# “Rabies Risk For Cattle Called Low” (Or Is It?)

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“Chester County's rabies epidemic poses little risk to the county's **\$84 million** livestock industry, a state agricultural official said, but health officials still are recommending that owners of large domestic animals consider vaccinating them.”

**April 02, 1988** | By Rich Henson, Inquirer Staff Writer (Philadelphia, PA)

# “Rabies is a serious concern in Pa.”

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“The memo from state health officials went out last month to some Pennsylvania veterinarians. The news about rabies, it said, was **“not good.”**”

For the **third straight year**, Pennsylvania will likely **top all other states** in reported cases of rabies in domestic animals. Through November, the state reported 70 cases, surpassing its 2009 total of 65.

“I am fairly sure our title will be held for a third year running of **most rabid domestic animals in the U.S.**,” a regional veterinarian with the state's Department of Agriculture said in the memo.”

**January 04, 2011** |By Mari A. Schaefer, Inquirer Staff Writer (Philadelphia, PA)

# Rabies confirmed at Tennessee horse show in 2006

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**About 150,000 people** attended the Tennessee Walking Horse National Celebration in August 2006. All **were at risk** of coming into contact with the saliva of a gelding stabled there, which was later confirmed to have rabies and was euthanized, according to the Centers for Disease Control and Prevention.

Centers for Disease Control website, posted Sept. 9<sup>th</sup>, 2006  
[www.cdc.gov/rabies/resources/news/2006-09-09.html](http://www.cdc.gov/rabies/resources/news/2006-09-09.html)

# Lyon Veterinary Clinic, South Lyon, MI Testimonial (Drs. Engers & McMahan)

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- Feb 2006- horse exhibited “furious” signs, died before examined, no post-exposure treatments needed by treating veterinarians
- June 2006- horse exhibiting neurologic signs that became “colic”, treatment by vet, 3 people needed post-exposure treatment (vet & owners)
- “The two cases we saw were in horses that were not vaccinated,” Dr. Engers said. “Prior to these two cases, we encouraged our clients to vaccinate for rabies and now we make it one of our core vaccines.”
- “There is absolutely no excuse not to vaccinate horses for rabies,” Dr. McMahan says. “It keeps everyone safe.”

*Rabies vaccination: For your horse's and your veterinarian's health*

Merial Press Release – EQUIBIM903 (01/09)

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# Personal Case Discussions:

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- Mid-1990's = 2 horses, 2 clinics, 2 colic surgeries
- 2002- middle aged Appaloosa mare at height of West Nile epidemic in Florida
- 2003- 2 QH broodmares in South Dakota
- Unvaccinated Belgian draft horse vs. rabid raccoon
- What to do with that herd of cows?
  - Current cattle prices:
    - ~500-550# feeder calf = ~\$700
    - ~1300# slaughter steer OR young bred cow = ~\$1400-1500

Ft. Pierre Livestock Auction, Inc., Ft. Pierre, SD  
<http://www.ftpierrelivestock.com/>

# Rabies surveillance in the United States during 2009

- Domestic animals accounted for 7.5% of all rabid animals reported during 2009, representing a 7.2% **increase** in the number of rabid domestic animals, compared with 2008.
- Number of reported cases of rabies **increased** for all domestic species with the exception of goats and sheep.
- The number of rabid goats and sheep reported **decreased** 33.3% from 12 to 8.
- The number of rabid cattle reported **increased** 25.4% from 59 in 2008 to 74 in 2009.
- The 41 rabid horses and mules reported during 2009 represented a 36.7% **increase**, compared with the number reported (30) during 2008.
- There were 300 cats and 81 dogs reported in 2009 vs. 294 for cats and 75 for dogs in 2008. Both species **increased!**

# Current rabies numbers to date (2011):

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- 26 cases of Bovine rabies
  - Mostly in VA, TX and MN
- 18 Equine rabies cases
  - 14 are in Texas alone
- 3 Goat rabies cases on record
- The CDC and many state health departments are still in the recording process. Final 2010 numbers are not available.
  - \*\*2011 numbers were obtained by visiting each state's website that has a reporting system for information and then figures tallied together.

# Compendium of Animal Rabies Prevention and Control, 2011

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- Released May 31, 2011
- All horses should be vaccinated against rabies.
- Livestock, including species for which licensed vaccines are not available, that have frequent contact with humans (e.g., in petting zoos, fairs, and other public exhibitions) should be vaccinated against rabies.
- Consideration should also be given to vaccinating livestock that are particularly valuable.

# AAEP recommends for horses:

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- “Rabies is an infrequently encountered neurologic disease of equids. While the incidence of rabies in horses is low, the disease is invariably fatal and has considerable public health significance. It is recommended that rabies vaccine be a core vaccine for all equids.”

American Association of Equine Practitioners website

[http://www.aaep.org/vaccination\\_guidelines.htm](http://www.aaep.org/vaccination_guidelines.htm)

# Where can I find equine vaccination information and guidelines?

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- American Association of Equine Practitioners (revised in 2009)
- Guidelines for the Vaccination of Horses  
[http://www.aaep.org/vaccination\\_guidelines.htm](http://www.aaep.org/vaccination_guidelines.htm)

# 2011 Post-exposure Management Guidelines for Livestock

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- Any illness in an exposed animal should be reported immediately to the local health and agriculture officials.
  - (1) Unvaccinated livestock should be euthanized immediately. If the animal is not euthanized, it should be observed and confined on a case-by-case basis for 6 months.
  - (2) Livestock exposed to a rabid animal and currently vaccinated with a vaccine approved by USDA for that species should be revaccinated immediately and observed for 45 days.
  - (3) Multiple rabid animals in a herd or herbivore-to-herbivore transmission are uncommon; therefore, restricting the rest of the herd if a single animal has been exposed to or infected by rabies is usually not necessary.

# Rabies vaccines available for horses:

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- IMRAB<sup>®</sup> 3 - Merial
- IMRAB<sup>®</sup> LA – Merial
- POTOMAVAC + IMRAB<sup>®</sup> - Merial
- RABVAC<sup>®</sup> 3 –Boehringer Ingleheim
- RABVAC<sup>®</sup> 3 TF –Boehringer Ingleheim
- EQUIRAB<sup>®</sup> – Merck



Photo- Georga Sutton

# Rabies vaccines available for cattle:

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- IMRAB<sup>®</sup> 3 – Merial
- IMRAB<sup>®</sup> LA – Merial
- RABDOMUN<sup>®</sup> – Merck
- DEFENSOR<sup>®</sup> 3 – Pfizer



Photo-  
Dr Heather Sutton

# Rabies vaccines available for sheep:

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- IMRAB<sup>®</sup> 3 – Merial
- IMRAB<sup>®</sup> LA – Merial
- DEFENSOR<sup>®</sup> 3 – Pfizer
- RABDOMUN<sup>®</sup> – Merck
- PRORAB<sup>®</sup> 1- Merck



# What about rabies vaccine for pigs and goats?

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- Currently, there are NO rabies vaccines labeled for use in either pigs or goats.

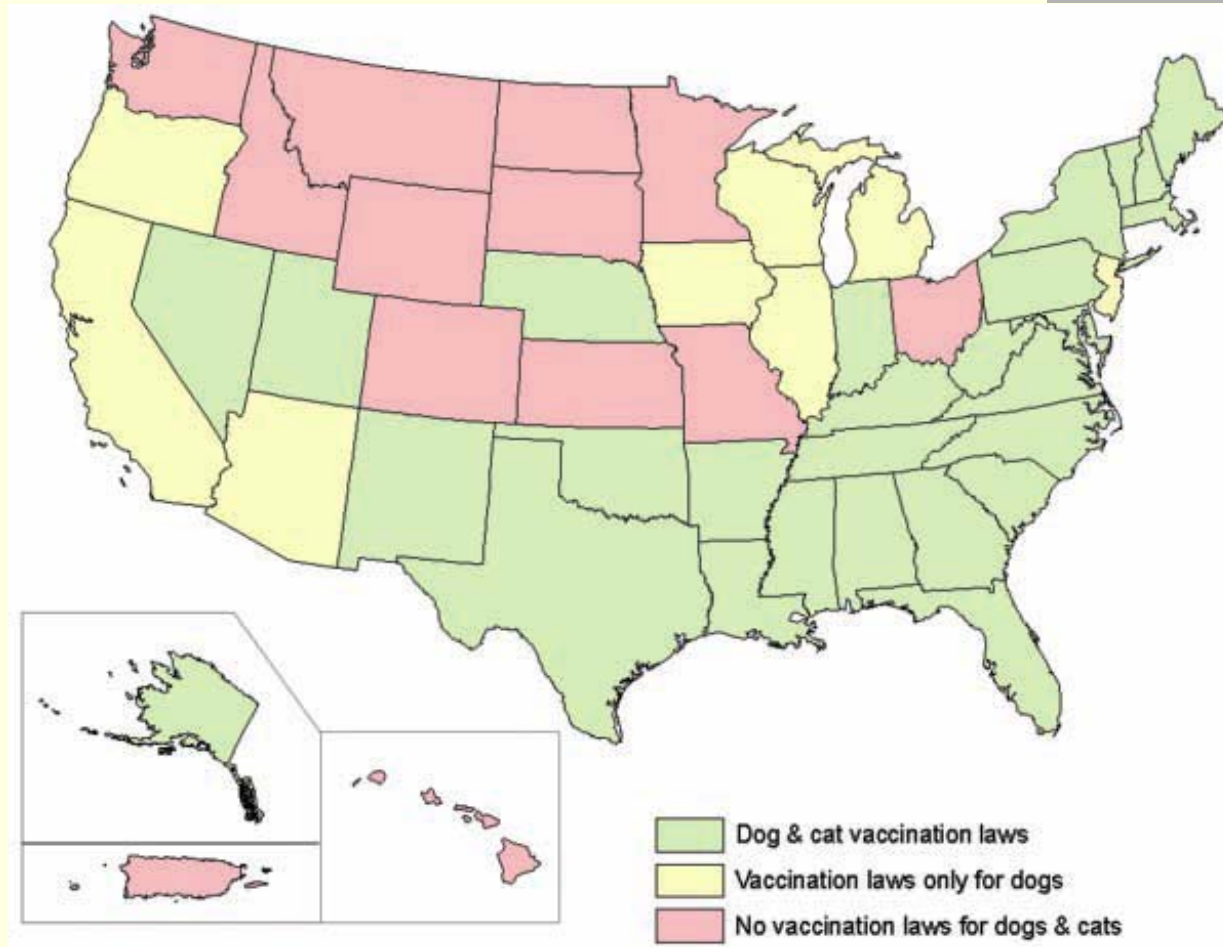


# Don't Forget!

- Dogs and cats that come in contact with livestock and horses need to be vaccinated for rabies, too.



# State legislation requiring rabies vaccination of cats and dogs, 2009.



# Public Health Regulations

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- **Vaccination Laws based on National Guidelines**
- **Managed by the State Health Department sometimes with assistance from the State Veterinarian**
- **Vary considerably from state to state, county to county**
- **Universally fatal outcome (Rabies = Death)**
- **Focus on paradigm of protecting the public first, the animals second**

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**“An ounce of prevention is  
worth a pound of cure.”**

Benjamin Franklin

# QUESTIONS?



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