Animal Encounters

West Virginia Sanitarian Training Class
Course Objectives

- Understand Rabies Surveillance
- Who can transmit rabies
- Signs of rabies
- Management of exposure in humans and animals
- Rabies Prevention
- When and how to submit animal specimens to OLS
- Documenting Animal Encounters
Reference Material

• DC-4 Rabies Surveillance Management and Control Guide
• West Virginia Code 19-20 Dogs and Cats
  • Section 9a Rabies Observation
• West Virginia Code 19-20a Vaccination of Dogs and Cats
• 64 CSR 7 Reportable Diseases Law
  • Section 5 Animal Exposures
Forms

- SG-58 Animal Encounter Form
- SG-59 Notice of Quarantine
- Laboratory Submission Form
What is Rabies?

• Disease caused by the rabies lyssavirus
• Causes inflammation of the brain in humans and other mammals
• Fatal Disease
• Zoonotic Disease
What is Rabies?

• Worldwide Disease

• Outside the US, dogs are responsible for 99% of rabies deaths in humans.

• Up to 95% of human deaths due to rabies occur in Africa and Asia.

• Death due to rabies is rare in the US.
What is Rabies?
Purpose

• Rabies Surveillance

• “the continued watchfulness over the distribution and trends of incidence [of a disease] through the systematic collection, consolidation, and evaluation of morbidity and mortality reports and other relevant data.” [Alexander Langmuir]
Rabies Surveillance

• Why Rabies?
• Fatal Disease
• Zoonotic Disease
Rabies Surveillance

• Active

• Testing of roadkill animals, sick acting animals, or animals displaying signs of rabies

• Passive

• Testing and/or quarantining animals that have caused a human or animal exposure
Definitions

• Confinement
  • Housed in a building, pen or by some other suitable escape-proof method or enclosure.
  • Prevents exposure of other humans or animals to the animal during the confinement period.

• Strict Isolation
  • A kennel in a veterinary hospital, animal control facility, commercial boarding establishment, or a pen at home (see Appendix A) that prevents direct contact between the animal and any human or other animal, but allows for observation, feeding, watering and sanitation.
Definitions

• Vector Species
  • Animal capable of transmitting rabies

• Exposure
  • Bite or scratch from a vector species
  • Introduction of saliva or central nervous system tissue from a vector species into an open wound, fresh wound (break in the skin that has bled in the last 24 hours), or mucous membrane. *Organ Transplant*
  • Bat exposure with no visible bite or scratch
  • Blood does not contain the virus, but can mix with saliva in an encounter

Image Source: https://tudosobregatos.com.br
Definitions

• Reasonable Attempt to Contact
  • Phone call with voice mail, if possible
  • Phone call with voice mail, if possible
  • Phone call with or without voice mail
  • Letter
Rabies Transmission

- Any mammal
- Most Likely
- Wild and Domestic Mammalian Carnivores
  - Procyanidins: raccoons – primary reservoir in the eastern US
  - Canids: foxes, dogs, coyotes
  - Felids: cats
  - Chiropterans: bats
  - Mustelids: skunks, ferrets
Rabies Transmission

- Less Likely

- Wild and Domestic Mammalian Herbivores
  - Rodents: groundhogs, mice and rats, squirrels, prairie dogs
  - Livestock: cows, horses, pigs, sheep, goats
  - Lagomorphs: rabbits
  - Primates: monkeys and apes
Rabies Transmission

• Can opossums get rabies?
  • Yes!
• Transmission in opossums is rare
  • Strong immune system
  • Lower body temperature
• Bite or scratch from an opossum should be considered an exposure
Rabies Transmission

- Not Possible
- Reptiles
- Birds
- Fish
- Insects
Rabies Reservoirs in the US

Image Source: https://www.cdc.gov
Rabies Pathology

• Enters body through an exposure.
• Travels along the nervous system from the exposure point to the brain stem (incubation period – no transmission of virus).
• Reproduces in the brain and brain stem, which causes rabies symptoms. Rabies virus present in saliva at this point.
• Domestic animals will die within 10 days of symptom onset.
• Wild animals – transmission to death period unknown
• Long transmission period = reservoir
Signs of Rabies

• Behavioral
  • Sudden behavior changes
  • Calm and/or timid animals become aggressive (furious rabies)
  • Aggressive or fearful animals become calm and friendly (dumb rabies)

• Neurological
  • Confusion, sluggishness
  • Neck muscle paralysis (foaming at the mouth)
  • Trouble walking and vocalizing, seizures
Signs of Rabies

• If a vector animal is showing the signs of rabies
  • Take shelter and call 911
  • Don’t try to capture the animal yourself
  • Don’t aim for the head

• If you find a vector animal that is acting sick or has died
  • Contact animal control or other non-emergency services
  • Don’t try to capture the animal yourself
Rabies Prevention

- Vaccinate all dogs, cats, ferrets, and livestock
- WV Code 19-20a requires all owned domestic dogs and cats to have a current rabies vaccination
- Don’t approach or handle wildlife or feral animals
- Know the signs of rabies
Rabies Prevention

• Oral Rabies Vaccination Program (ORV)
• Oral vaccine that is distributed via airplane
• Targets raccoons and skunks
Rabies Prevention

Oral Rabies Vaccine (ORV) Distribution Areas 2020
Rabies Prevention
Animal Encounter Reporting

• Who must report an Animal Encounter? (64CSR7-5.1)
  • 5.1.a. The physician or other health care provider caring for or observing the person;
  • 5.1.b. The veterinarian or animal health care provider;
  • 5.1.c. The humane or animal control officer;
  • 5.1.d. The person bitten, scratched, or otherwise exposed, if no physician or other health care provider is in attendance and the person bitten, scratched or otherwise exposed is an adult;
Animal Encounter Reporting

• Who must report an Animal Encounter? (64CSR7-5.1)
  • 5.1.e. Whoever is caring for the person, if no physician or other health care provider is in attendance and the person bitten, scratched, or otherwise exposed is incapacitated; or
  • 5.1.f. The parent or guardian, if no physician or other health care provider is in attendance and the person bitten, scratched or otherwise exposed is a child.
• Exposures must be reported to the Health Department within 24 hours.
Human Exposure

• To Owned Domestic Animal
  • Contact animal owner (vector animal), if possible
  • Get incident information
  • Ask owner if animal has a current rabies vaccine
  • If animal has a current rabies vaccine, get a copy of the vaccine record from the owner or the veterinarian
  • Explain quarantine – 10 Day Confinement
  • Mail Notice of Quarantine to animal owner
Human Exposure

• To Owned Domestic Animal
  • Contact victim, if possible
  • Get incident information
  • Explain quarantine

• Refusal of Quarantine
  • Sanitarian can not seize animals or issue fines
  • Animal control or Sherriff can
Human Exposure

• To Feral Domestic Animal or Unknown Domestic Animal
  • Contact victim, if possible, and get incident information
  • Capture feral animal if possible, captured domestic animals can be confined
  • Recommend that the victim discuss rabies treatment with their doctor due to their increased risk for rabies.
  • **Do not give medical advice!** Doctor must decide treatment.
  • If captured or collected, have the animal processed and shipped to OLS
  • Report lab results to victim and/or ask if they received rabies treatment
  • If yes, record dates and location of injections
Human Exposure

• To Livestock
  • Contact victim, if possible, and get incident information
  • Contact WV Department of Agriculture – Animal Health Division
  • Testing is recommended, but 10 – 14 day observation is possible
  • Consult with epidemiologist
  • Recommend that the victim consult with their doctor about rabies risk.
Human Exposure

• To Wild Animal
  • Contact victim, if possible, and get incident information
  • Capture, or collect wild animal if possible (quarantine not possible)
  • Highly recommend that the victim discuss rabies treatment with their doctor due to their increased risk for rabies.
  • **Do not give medical advice!** Doctor must decide treatment
  • If captured or collected, have the animal processed and shipped to OLS
  • Report lab results to victim and/or ask if they received rabies treatment
  • If yes, record dates and location of injections
Human Exposure

• To a Bat
  • Common exposure: found in room after sleeping
  • Bats have very small teeth so a bit or scratch may not be visible
  • Follow steps for wild animal exposure
  • Bats cause 70% of rabies infections in the US

Human Exposure

• To a Primate
  • Contact victim, if possible, and get incident information
  • Tell the victim to seek medical treatment ASAP!
  • Do not give medical advice! Doctor must decide treatment
  • Capture, or collect the animal if possible
  • If captured or collected, have the animal processed and shipped to OLS
  • Report lab results to victim and/or ask if they received rabies treatment
  • If yes, record dates and location of injections
Domestic Animal Exposure

• To Owned Domestic Animal
  • Contact animal owner (vector animal), if possible
  • Get incident information
  • Ask owner if animal has a current rabies vaccine
  • If animal has a current rabies vaccine, get a copy of the vaccine record from the owner or the veterinarian
  • Explain quarantine
  • Mail Notice of Quarantine to animal owner
Domestic Animal Exposure

• To Owned Domestic Animal
  • Contact victim animal owner, if possible
  • Get incident information
  • Ask owner if animal has a current rabies vaccine
  • If animal has a current rabies vaccine, get a copy of the vaccine record from the owner or the veterinarian
  • Explain quarantine
  • Mail Notice of Quarantine to animal owner
Domestic Animal Exposure

• To Feral Domestic, Unknown Domestic or Wild Animal
  • Contact animal victim owner, if possible, and get incident information
  • Capture vector animal if possible, captured domestic animals can be confined
  • Ask owner if animal has a current rabies vaccine
  • If animal has a current rabies vaccine, get a copy of the vaccine record from the owner or the veterinarian
  • If captured or collected, have the animal processed and shipped to OLS
Domestic Animal Exposure

- To Feral Domestic, Unknown Domestic or Wild Animal

<table>
<thead>
<tr>
<th>Vector Animal Type</th>
<th>Available for Testing or Quarantine</th>
<th>Positive Test or Shows Signs of Rabies</th>
<th>Victim Animal Vaccinated</th>
<th>Quarantine Action*</th>
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<tbody>
<tr>
<td>Domestic</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>10 Day Confinement</td>
</tr>
<tr>
<td>Domestic</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>45 Day Observation</td>
</tr>
<tr>
<td>Domestic</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>6 Month Strict Isolation</td>
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<tr>
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<td>Yes</td>
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<td>45 Day Observation</td>
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<td>6 Month Strict Isolation</td>
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<tr>
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Background Image Source: [https://www.flickr.com/photos/bremnerj/406427724](https://www.flickr.com/photos/bremnerj/406427724)
Domestic Animal Exposure

• To Feral Domestic, Unknown Domestic or Wild Animal

• Expired Vaccine = consult epidemiologist

• Any animal that is going to be placed under 45-day observation must be re-vaccinated ASAP.

• Any animal placed in 6-month strict isolation must be vaccinated upon entry and one month prior to release.

• Any animals that develop symptoms during quarantine must be evaluated by a veterinarian

• Any animal that is euthanized during a quarantine must be submitted to OLS for rabies testing
Domestic Livestock Exposure

- Contact Department of Agriculture ASAP
- Vaccinated: re-vaccinate, 45-day observation
- Unvaccinated: 6-month confinement, vaccinate after 5 months
Rabies Testing

• Direct Fluorescent Antibody Staining
  • Brain tissue is stained with a special dye and viewed under blacklight with a microscope.
  • Rabies virus glows (fluoresces) under blacklight.

https://www.cdc.gov/rabies/diagnosis/direct_fluorescent_antibody.html
Rabies Testing

- OLS Requirements for specimen submission
  - Animal causes an exposure
  - Occasional environmental “spot check” of areas (active surveillance)
  - A vector animal showing the signs of rabies or unusual behavior
  - Humanly euthanized and head removed, or brain removed in the case of large livestock. This must be done by a qualified individual.
  - Whole bats and small rodents can be submitted.
Rabies Testing

• OLS Requirements for specimen submission
  • Must be stored under refrigeration after euthanasia and during transport.
  • Sample must reach OLS within 7 days of death.
  • Do not freeze!
  • Do not bury!
  • Brain must be intact.
  • Completed Laboratory Submission Form.
Documenting Animal Encounters

• Paperwork
  • Complete the SG-58 Animal Encounter Form
  • Remember: SG-58 and other forms and paperwork may contain protected health information (PHI) – follow HIPPA guidelines

• Database Entry
  • WVEDSS
  • Health Space
Questions?