The Rabies Virus

- Viral disease of mammals
- Zoonotic disease: can spread from animals to humans
- Infects the central nervous system (brain and spinal cord)

Photo Source: Dr. Fred Murphy, Centers for Disease Control and Prevention, Public Health Image Library
Symptoms in Humans

**Initial stage of disease:**
*Similar to other illnesses*
- Fever
- Headache
- General weakness
- Discomfort

As the disease progresses, other symptoms appear.

**Later stage of disease:**
- Pain and tingling at site of bite
- Anxiety
- Insomnia
- Confusion
- Slight or partial paralysis
- Hallucinations
- Agitation
- Hypersalivation
- Difficulty swallowing
- Hydrophobia (fear of water)
Once symptoms appear, RABIES IS ALMOST **ALWAYS FATAL**...
Transmission and Exposure

- Transmitted through infected saliva
- Typically a bite from a rabid animal, “bite exposure”
- Although rare, possible transmission through “nonbite exposure”

**Nonbite exposures:**
- Scratches
- Abrasions
- Open wounds
- Mucous membranes, such as the eyes, nose or mouth
- Organ transplants
- Cornea transplants
Path of the Virus in Animals

- Exposure: Animal bite
- Spreads through the nerves to the spinal cord and brain
- Incubation period: weeks to months
- Disease reaches brain and replicates causing inflammation
- Moves to salivary glands and saliva – infectious
- Exhibits symptoms of rabies
- Death of infected animal usually within 7 days of onset of symptoms

An animal can transmit the virus several days before the onset of symptoms.
Signs of Rabies in Animals

Symptoms:

- Progressive paralysis (throat and facial muscles)
- Inability to swallow, causing excess salivation
- Lower jaw drop due to facial paralysis
- Docile or lethargic
- Restlessness
- Hyperaggressive behavior
- Rapid breathing
- Incoordination
- Convulsions (seizures)

Highly variable

- Behavioral changes
  - Lose fear of humans (approaching humans)
  - Ignoring the presence of humans
  - Uncharacteristically affectionate
  - Nocturnal animals wandering in daylight

- Unexplained paralysis
Common Rabid Animals in Maryland

Feral (wild) or Stray Cats

Raccoons

Bats

Skunks

Foxes

Raccoons and bats are the most common.
Other Rabid Animals

Rabies can infect any mammal (warmblooded).

- Groundhogs/Woodchucks
- Dogs
- Otters
- Beavers
- Goats
- Deer
- Horses
- Cows

Rabid Raccoons by U.S. County, 2015

Rabid Skunks by U.S. County, 2015

Rabid Cats by U.S. County, 2015

Rabid Foxes by U.S. County, 2015

Rabid Dogs by U.S. County, 2015

Rabid Animals in Anne Arundel County, 2017

Source: Anne Arundel County Department of Health, Bureau of Environmental Health, November 2017
RABIES IS 100% PREVENTABLE
Minimize Risk of Exposure

Pets:
- Direct supervision when outdoors.
- Do not feed your pet outside.
- Maryland law (Article 12, Title 4, Subtitle 6-601) requires that all dogs, cats and ferrets 4 months of age and older be vaccinated against rabies.
- After first dose of rabies vaccine, need a one year follow-up vaccination, then once every three years.
- Regular veterinarian visits and keeping rabies vaccination up to date are necessary.
Rabies Vaccination for Pets

Anne Arundel County Animal Control Weekly Rabies Clinic:

- $5.00 Vaccination Cost, $20.00 Microchip Implantation Cost
- Every Thursday (except holidays) 12:00-3:00 p.m.
  - 9:00 a.m. – 12:00 p.m. July through September (due to the heat)
- Extended clinic hours four times a year (12:00-7:00 p.m.)
- For more information: http://www.aacounty.org/services-and-programs/rabies-clinic
Reducing Your Risk

- Store trash in cans with tight-fitting lids.
- Enjoy wild animals from a distance.
- Do NOT handle or feed wild or stray animals.
- If your pet is exposed, use gloves when handling them and call your vet.
- Prevent bats from entering your home.

Photo Source: Wikimedia Commons, U.S. Fish and Wildlife Service
Be Aware of Bats

- Look for signs of bat activity.
  - Look for guano (bat droppings).
- Inspect the outside of your house.
  - Keep an eye out for any gaps or cracks.

Photo Source: Wikimedia Commons, Gilles San Martin
How Do Bats Get into My House?

- Unscreened attic vent
- A hole or crack under rotted eave (edge of roof)
- A crack or separation where the chimney meets the house
- Loose or warped siding
- An open cellar hatch
- Chimney
- Openings where pipes or wiring enter the house
- Rotted window sills or a loose fitting screen
- Unscreened doors or windows left open

Typically bats enter the home through gaps or cracks (¼” to ½”) in length.

Inspection and Exclusion

If no potential exposure (human or pet):

✓ Call a Wildlife Cooperator for inspection and exclusion (includes a fee).
✓ Do the exclusion yourself.
  ▪ Department of Natural Resources website
  ▪ Nuisance Wildlife Hotline

Bats roosting in the vent of a home.

Photo Source: Anne Arundel County Department of Health, Bureau of Environmental Health
If a Bat Enters Your Home...

- Do not release the bat.
- Isolate the bat.
- Call Animal Control to remove the bat, or...
- Capture the bat safely.
How to Catch a Bat Safely

1. Close windows and doors.
2. Cover bottom of each door.
3. Use a container, stiff cardboard and heavy gloves.
4. Keep your eyes on the bat.
5. Approach the bat slowly.
6. Place container over the bat and slip cardboard under the container.
7. Tape cardboard to the container.
8. Contact Animal Control to send bat for rabies testing.

Photo Source: Anne Arundel County Department of Health, Bureau of Environmental Health
Contact with Bats

- Bat bites are not easily visible.
- If a bat is physically present and you cannot rule out having been bitten...
  - Seek medical attention.
  - Safely capture the bat.
  - Call Animal Control to remove the bat and send for rabies testing.

Situation in which, one cannot reasonably rule out being bitten:
- A sleeping individual
- Unattended children
- Mentally impaired or intoxicated person

If Exposed...

- Wash the wound immediately with soap and water.
- Report the bite or exposure to Animal Control or your local health department.
- Seek medical attention and notify your health care provider.
Rabies Vaccination

**Pre-exposure Vaccinations**
- Given *before* exposure
- Considered for individuals at high risk of exposure to rabies

**At risk:**
- Rabies laboratory workers
- Veterinarians and staff
- Animal control workers
- Wildlife workers

*Simplifies postexposure management*

**Postexposure Vaccinations**
- Given *after* suspected exposure to rabies virus
- Highly effective treatment in preventing rabies in humans

**Includes:**
- Cleaning the wound
- Rabies immune globulin (*postexposure only*)
- Four to five doses of rabies vaccine
Resources

Anne Arundel County Animal Control:
(410) 222-8900

Anne Arundel County Department of Health:
(410) 222-7256

Nuisance Wildlife Hotline:
(877) 463-6497

Maryland Department of Natural Resources:
(410) 260-8540 – M-F 8:30 a.m. – 5:00 p.m.
(410) 260-8888 – 24 hours
Resources and References

Anne Arundel County Department of Health
www.aahealth.org

Anne Arundel County Animal Control
http://www.aacounty.org/departments/animal-control/

Centers for Disease Control and Prevention
www.cdc.gov/rabies/

Maryland Department of Health
https://phpa.health.maryland.gov/OlDEOR/CZVBD/Pages/rabies.aspx

Maryland Department of Natural Resources
http://www.dnr.maryland.gov

“Bats in Houses” (Maryland Department of Natural Resources)
http://dnr.maryland.gov/wildlife/Pages/plants_wildlife/bats/batsinhome.aspx
Questions?

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