Tracking Animal Bites in Maryland, 2001-2002

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Why Track Animal Bites?

- Ten essential functions of public health listed in the report by Public Health Functions Steering Committee
- One function is to “monitor health status to identify and solve community health problems”
“Maryland statute, specifically Maryland Code Annotated, Health-General ("Health-General ") §§18-201 and 18-202, and Maryland regulation, specifically Code of Maryland Regulations ("COMAR") 10.06.01 Communicable Diseases, require that health care providers, hospitals, and certain others specified … submit a report in writing of diagnosed or suspected cases of specified diseases to the Commissioner of Health in Baltimore City or the health officer in the county where the provider cares for that person.”

- Rabies is one of the reportable diseases listed that required immediate reporting by telephone.
- An animal bite is a reportable condition
Rabies

- Virus from the Rhabdoviridae family, Lyssavirus genus
- Transmission to humans is almost always via animal bites, by exposure to infected saliva
- Incubation period of 3-8 weeks, but up to a year
- Causes acute viral encephalitis
- Nearly 100% fatal (only 7 documented survival cases)
Rabies in the World, 1998

- Estimated 35,000 – 50,000 human rabies cases annually
- Highest incidence in Asia – 33,075 reported cases
- India accounts for an estimated 30,000 cases
- Rabies usually diagnosed on clinical grounds
- Dogs are the main source of exposure

Rabnet/WHO, World Rabies Survey No. 34 for the year 1998
Rabies in the United States

- Human rabies cases fell from > 100 cases/yr at the turn of the century to 1-2/yr in 1990s
- From 1990-2000, there were 32 cases of human rabies, 75% from bat exposure
- In 2001, 97% animal rabies cases in wildlife
- Raccoons most frequently reported, 37.2%
- More than $300 million spent annually on prevention & control

NCID/CDC, Rabies: Introduction webpage
Cases of Human Rabies, United States, 1994-2003

Compilation of data from MMWR, 1994 - 2004
Cases of Animal Rabies, 1955-2002

NCID/CDC, 2002 Rabies Surveillance Slides
Distribution of Major Terrestrial Reservoirs of Rabies in the United States

NCID/CDC, 2002 Rabies Surveillance Slides
Rabies in Maryland

- Last human rabies case in 1976 (bat strain)
- Cost of post-exposure prophylaxis is approximately $1,100 to $1,500/person
- In 2001, 505 of 4,964 animals tested were found rabid
- 95% rabies in wild animals
- Raccoons make up 72.5% of all rabies cases
- Cats account for 88% of domestic animal cases
Scope of Project

- Compile and complete reports on animal bite and non-bite exposures in Maryland for 2001 and 2002
Definitions

- **Bite**: any penetration of the skin by teeth
- **Non-bite exposure**: scratches, abrasions, open wounds, or mucous membranes contaminated with saliva or other potentially infectious material such as brain or nerve tissue.
Method

- Data was collected for the 24 local health departments by sanitarians
- Data discrepancies were checked and reconciled with local health departments
- Data were entered into a database and organized by month and jurisdiction
- Data analysis
- Graph generation
Statewide Exposure

- Animal bites and non-bites exposures have decreased over the last 3 years
- In 2001, there were 10,140 animal bites and 1,289 non-bite exposures
- In 2002, there were 9,326 bites and 1,512 non-bite exposures
Animal Bites by Jurisdiction

- Largest number of bites reported in jurisdictions with largest populations: Baltimore County, Anne Arundel County, Montgomery County, Baltimore City, Prince George’s County
Reported Animal Bites in Maryland by Jurisdiction, 2001

One Dot = 30 Bites

Reported Animal Bites and Exposures in Maryland, 2001
Statewide Incidence Rates

- The state incidence rate per 100,000 people for all animal bites decreased from 195 in 2000 to 190 in 2001, then to 173 in 2002.
- The state non-bite exposure incidence rate per 100,000 people fluctuated from 25 in 2000 to 24 in 2001, then to 28 in 2002.
- State incidence rates for dog bites & cat bites have decreased from 2000 to 2002.
- Certain jurisdictions have increased incidence rates during this time.
Reported Animal Bites and Exposures in Maryland, 2002

Maryland Counties
Incidence Rates/100,000 people
- 0 - 100
- 101 - 200
- 201 - 300
- 301 - 400
- 401 - 500
Reported Cat Bites in Maryland by Jurisdiction, 2002

Maryland Counties
Incidence Rates/100,000 people
- Orange - 101 - 200
- Red - 201 - 300

Reported Animal Bites and Exposures in Maryland, 2002
Exposure by Species

- Dog are the most common source of bite exposure, with cats trailing second
- Cats are the leading source for non-bite exposures
- Exposures increase during the months of April to July
- Bat bite exposure was highest in the summer months
Reported Animal Bites to Humans in Maryland, by Species, 2002
(n=9,326)

Dog (n=6,572)
70%

Cat (n=2,304)
25%

Other (n=450)
5%
Reported Nonbite Exposures to Humans in Maryland, by Species, 2002
(n=1,512)

- Cat (n=572) 38%
- Dog (n=302) 20%
- Bat (n=295) 20%
- Raccoon (n=136) 9%
- Squirrel (n=52) 3%
- Other (n=155) 10%
Animal Bite and Nonbite Exposures to Humans in Maryland, by Month of Report, 2002

Reported Animal Bites and Exposures in Maryland, 2002
Rabies in Domestic Animals by Month, 2002

United States

Cats | Cattle | Dogs

Month

Cases

Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec

NCID/CDC, 2002 Rabies Surveillance Slides
Dog and Cat Bites to Humans in Maryland, by Month of Report, 2002

Reported Animal Bites and Exposures in Maryland, 2002
Rabies in Wild Animals by Month, 2002

United States

NCID/CDC, 2002 Rabies Surveillance Slides
Bat Bites to Humans in Maryland, by Month of Report, 1999 - 2002

Reported Animal Bites and Exposures in Maryland, 2002
Summary

- Bites and non-bite exposures number the most in the more populated jurisdictions of the state.
- The incidence rate ranges vastly from jurisdiction to jurisdiction.
- Continued need to warn the public about handling of animals, especially wild animals.
Because there is no treatment for rabies when someone becomes symptomatic, efforts need to be placed on prevention and control.
Prevention and Control: Vaccine

- High risk groups need pre-exposure vaccination
- Post-exposure prophylaxis (PEP) for persons possibly exposed to rabies (one dose of rabies immune globulin and five doses of rabies vaccine given over 28 days)
After Possible Exposure

- Wash the wound thoroughly with soap and water
- Seek medical attention immediately
- Notify healthcare provider about:
  1. the geographic location of the incident
  2. the type of animal that was involved
  3. how the exposure occurred (provoked or unprovoked)
  4. the vaccination status of animal
  5. whether the animal can be safely captured and tested for rabies
Pet Owners

- Keep vaccinations up-to-date for all dogs, cats and ferrets.
- Keep your pets under direct supervision so they do not come in contact with wild animals. If your pet is bitten by a wild animal, seek veterinary assistance for the animal immediately.
- Call your local animal control agency to remove any stray animals from your neighborhood.
- Spay or neuter your pets to help reduce the number of unwanted pets that may not be properly cared for or regularly vaccinated.

NCID/CDC, Rabies: Prevention and Control
Interacting with Nature

- Enjoy wild animals (raccoons, skunks, foxes) from afar. **Do not** handle, feed, or unintentionally attract wild animals with open garbage cans or litter.
- **Never** adopt wild animals or bring them into your home. **Do not** try to nurse sick animals to health. Call animal control or an animal rescue agency for assistance.
- Teach children **never** to handle unfamiliar animals, wild or domestic, even if they appear friendly. "Love your own, leave other animals alone" is a good principle for children to learn.
- Prevent bats from entering living quarters or occupied spaces in homes, churches, schools, and other similar areas, where they might come in contact with people and pets.
- When traveling abroad, avoid direct contact with wild animals and be especially careful around dogs in developing countries.

NCID/CDC, Rabies: Prevention and Control
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Love your pets, vaccinate them for rabies!