

***SUBJECT: Guidelines for Managing Bats and Risk of Rabies Transmission***

Most of the human deaths from rabies in the United States in recent years have been due to infection with bat variants of the rabies virus, and most of these have been due to a single bat variant which studies show may be uniquely adapted for transmission. The number of human deaths from bat rabies is small, usually fewer than five each year in the U.S., and most bats do not have rabies. Thus the risk of death from contact with bats is low. In addition, bat presence is not abnormal in certain environments. However, evidence indicates that many of the human cases resulted from bites that were not recognized or reported.

Because rabies is an incurable, fatal disease once symptoms begin, it is desirable to reduce the risk of acquiring rabies as much as possible, acknowledging that achieving zero risk is not possible with any health issue. These NYSDOH guidelines have been developed based on national guidelines from the Centers for Disease Control and Prevention\*, to provide recommendations for achieving risk reduction with reasonable measures. For questions about implementing these guidelines, please contact the State Department of Health at 518-474-3186.

NYS is unique in that rabies treatments that have been authorized by the county health authority are managed and paid for (after payment by third party payers) by county health authorities. To insure maximum availability of public health resources, and conserve frequently scarce vaccine and immune globulin supplies, NYSDOH recommends that county health authorities only authorize treatments that fall under the recommendations in these guidelines. Patients and physicians who wish to obtain rabies treatment for situations in which NYSDOH or the county health authorities do not recommend or authorize treatment may use their own resources to do so.

**I. Definition of Exposure to a Bat**

Rabies treatment should be recommended and authorized for all bat exposures that fall under the traditional definitions of exposure to rabies. These are the same as the guidelines for other species. Treatment should be authorized for the following exposures after contact with a rabid or untestable bat:

- C bites (this is the primary, well-documented route of exposure)
- C scratches
- C saliva or nervous tissue in contact with a mucous membrane (e.g., inside of eyes, nose, mouth) or an open break in the skin

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\*Human rabies prevention—United States, 1999: recommendations of the Advisory Committee on Immunization Practices (ACIP)

Because people can develop rabies after inapparent exposures, rabies treatment also should be recommended and authorized in situations in which there is a **reasonable probability** of any of the aforementioned exposures. The primary circumstances in which this could occur include:

- C direct physical contact with a bat
- C bat found in a room with a sleeping person
- C bat found in a room with an unattended child
- C in some circumstances, bat found in close proximity to an unattended child outdoors
- C bat found in a room with an individual under the influence of alcohol or drugs or with other sensory or mental impairment

See examples of situations (Part III) to assist in determining whether a reasonable probability of exposure has occurred.

## **II. Determining Rabies Status of the Bat**

It is frequently much easier to determine the rabies status of a bat which has potentially exposed someone to rabies than to determine the likelihood of exposure. Thus, in all circumstances in which there could be any questions about potential exposures, NYSDOH strongly advises: **CAPTURE THE BAT** and call the county health authority. Free rabies testing is available through the Wadsworth Center's Rabies Laboratory, and specimen preparation and shipment is managed by county health authorities. On average, 2% - 3% of bats tested by the Rabies Laboratory are positive for rabies, and thus most of the bat-related postexposure treatments could be avoided if the bats were captured and tested. Details of shipment procedures are available from the county health authorities and at the Rabies Laboratory web page: [www.wadsworth.org/rabies](http://www.wadsworth.org/rabies).

All homes, buildings, and camps where bats are seen indoors should have procedures and equipment in place to capture bats safely. Recommendations for bat capture in a building include:

- C wear gloves and avoid direct skin contact with the bat
- C avoid damage to the bat's head
- C confine the bat to one room (close the windows, the room and closet doors)
- C turn on lights if room is dark
- C wait for the bat to land
- C cover the bat with a coffee can or similar container
- C slide a piece of cardboard under the can trapping the bat
- C tape the cardboard tightly to the can
- C if necessary, use a net or long pole with a piece of duct tape (sticky side out) to capture bat
- C do not use glue board to capture bat (it cannot be easily removed for rabies testing)
- C immediately contact local health authority to arrange for rabies examination of the bat

### **III. Examples of situations in which there is a reasonable probability of exposure**

(postexposure treatment should be considered)

Direct contact with a bat:

- C child touches live or dead bat
- C teenager or adult touches bat without seeing the part of the bat they touched
- C bat flies into someone of any age and touches bare skin
- C adult sees bat fly near child and child reports it hit me
- C someone steps on a dead bat in bare feet
- C unidentified flying object hits someone and the time of day (dusk or dawn), presence of marks where it hit, and place that it was coming from (good for roosting bats, not birds) all support that it was a bat and not a bird or insect

Bats near a person:

- C person awakens to find a bat in the room with them
- C adult comes into room where child was left alone for a period of time, and live bat is found near child
- C person slept in camp cabin which was small, closed-in, and bats were swooping past sleeping people
- C bat found on ground near unattended infant, toddler, or a person with sensory or mental impairment
- C person puts hand in firewood or brush, feels pain, then sees a bat

**Examples of situations in which there is less evidence to support that there is a reasonable probability of exposure** (depending on the circumstances, postexposure treatment probably should not be recommended, but mitigating measures should be implemented, see Parts IV-VI)

Direct contact:

- C teenager or adult touches the back of a live bat while looking at it
- C bat brushes past thick long hair of teenager or adult and they are certain there was no skin contact
- C person has contact with a completely dried-up carcass of a bat

Bats near a person:

- C bats swoop past awake teenager or adult who does not feel them touch
- C dead bat found in room of home with no evidence that child touched it
- C bats are heard or seen in walls or attic of house
- C bats are found in other parts of the house even if bedroom doors were open
- C bats are heard or seen hanging from upper rafters of large A-frame cabin
- C bat guano or other signs of bat are found in sleeping quarters
- C bat found in sleeping quarters at a time when no one is there or there is an awake adult

#### **IV. Bats In Homes**

It is not unusual to find bats in homes in New York State, and the presence of bats usually does not result in a need for rabies postexposure prophylaxis. Most (~98%) bats tested at the NYS Wadsworth Center's Rabies Laboratory are negative for rabies. However, because many of the recent human cases of rabies may have acquired their disease from a bat bite in a home situation, all reasonable steps should be taken to keep bats out of the home environment, especially sleeping quarters.

To keep bats from getting into buildings, **bat proofing** techniques should include:

- C not leaving unscreened doors open to the outside
- C not leaving unscreened windows open to the outside
- C making sure windows have screens, chimneys are capped, and electrical and plumbing openings are plugged
- C sealing up all openings larger than ½ inch by ½ inch square into the attic, basement, walls, or occupied areas of the house
- C using materials such as expanding spray-on foam, caulk, wire mesh, wood that fits tightly, steel wool (around pipes that enter buildings), or polypropylene bird netting, to seal or cover gaps and holes.

To determine whether bats are already in a house, evidence can be obtained by:

- C hearing squeaking noises coming from attic, walls, or elsewhere
- C inspecting attic space, rafters, porches, and walls for signs of roosting bats, including bat guano and crystallized urine, or bare scratched areas on beams
- C walking around the outside of the house at dusk to see if bats are flying out of the house to feed, or before dawn to see if bats are flying into the house to roost

To get bats out of a house in which they are roosting or entering, **bat exclusion** techniques should include the following considerations:

- C killing or poisoning the bats is seldom a necessary or desirable solution
- C openings should not be sealed while bats are inside--this may drive them into occupied areas or create a sanitary problem if the bats are trapped and die inside
- C major home renovations and sealing should be done during the winter when most bats have left buildings
- C the bats' entry and exit points should be determined by observing the house at dusk or dawn as described above
- C special netting can be used in a manner that allows bats to exit the house, but not to re-enter it
- C pest control experts specializing in bat control should be consulted when necessary

## **V. Bats In Children's Camps**

Camps are usually located in areas that are prime habitat for bats and other wildlife, and the type of construction in camp buildings is often conducive to roosting bats. Bats are frequently encountered in the camp setting. If people are sleeping in cabins with bats, or children are handling bats found on the ground, rabies exposures can occur. Bats that are infected with rabies are often mistaken for injured animals when they are found flopping around on the ground. Abnormal behavior seen in rabid bats includes being on the ground, landing on someone, and flying during the day. Occasionally, there is no obvious abnormal behavior, so all contact with bats and other wild animals should be reported to the camp nurse.

**Inspections** for making decisions about which cabins will be used for sleeping should take place every spring before the camp opens. Inspections should include:

- C inspecting attic space, rafters, porches, and walls for signs of roosting bats, such as bat guano and crystallized urine, or a musty odor
- C looking for openings through which bats could get into sleeping quarters, such as openings larger than ½ inch by ½ inch and long thin slots larger than ¼ inch by 2 inches
- C not allowing cabins with evidence of bat roosts to be used as sleeping quarters until they have been bat proofed

Camp buildings and cabins, particularly those used as sleeping quarters, should be **bat proofed**:

- C do not bat proof buildings during the period from late May to mid-August, to avoid trapping baby bats inside the building
- C seal openings larger than ½ inch by ½ inch, or long thin slots larger than ¼ inch by 2 inches
- C use materials such as expanding spray-on foam, caulk, wire mesh, wood that fits tightly, steel wool (around pipes that enter buildings) etc., to seal gaps and holes.
- C make sure windows have screens, chimneys are capped, and electrical and plumbing openings are plugged

To reduce the risk of rabies and the need for large-scale exposure investigations and postexposure treatments, **health and environmental authorities should consider requiring that:**

- C camp directors and managers attend a pre-opening training session about zoonotic disease risks, including rabies
- C information about zoonotic diseases is provided by camp management to all camp staff and attendees at orientation sessions
- C information about zoonotic diseases is pre-approved by county health authorities

**Information** for camp directors, managers, staff, and attendees should include messages about:

- C avoiding contact with sick, injured or dead animals
- C preventing human or pet contact with a grounded bat
- C capturing a bat which may have exposed someone by covering it with a box or can and placing a rock or brick on top of the container to secure it
- C avoiding damage to the bat when capturing it; the brain must be intact for laboratory testing
- C calling the county health authority for advice regarding all potential bat encounters and submission of bats to the NYS Wadsworth Center's Rabies Laboratory for testing
- C immediately washing with soap and water any wounds or areas of skin contact with wild animals

**VI. Recommended Actions for Camp Areas and Buildings Based on Building Location, Use, and Findings:**

**During Pre-Camp Inspection**

	<b>Outdoors</b>	<b>Unoccupied</b>	<b>Day Use</b>	<b>Overnight</b>
area is conducive to roosting bats	education*	education	education	seek information about bat proofing
evidence of solitary bat presence	education	enter with caution	3rd priority** for batproofing	2nd priority for batproofing
a rabid bat is confirmed	education	enter with caution	re-inspection, 3rd priority for batproofing	re-inspection, 2nd priority for batproofing
roosting bats observed	education	restrict access	2nd priority for batproofing, cautious bat exclusion	1st priority for batproofing, bat exclusion confirmed prior to overnight use

**During Camp Sessions**

area is conducive to bats	education	education	education	seek information about bat proofing
evidence of solitary bat presence	education	restrict access, don't disturb bat	re-inspection, 3rd priority for batproofing	re-inspection, 2nd priority for batproofing
a rabid bat is confirmed	education	restrict access, don't disturb other bats	re-inspection, 3rd priority for batproofing	re-inspection, 2nd priority for batproofing
Roosting bats observed	education	restrict access, don't disturb bats	cautious bat exclusion, consider <b>restricting access</b> until batproofed based on bat proximity and age of campers	<b>relocate campers</b> until successful bat exclusion and batproofing (determined by bat watches)

\*Education: General education about bats and risk of rabies, avoiding exposures, and reporting exposures must be provided to all camp staff and camp attendees regardless of circumstances.

\*\*Priority for batproofing is based on the degree of risk for exposures which may require rabies postexposure treatments. Priority level reflects the relative importance for batproofing a particular building if a camp has a number of problem buildings. It may also be used by health and/or environmental authorities to develop appropriate timetables for remediation. Priority level may be used for determining resources and funds for remediation. The Zoonoses Program (518-474-3186) should be the first contact for questions about implementation of these priorities.

## **VII. General Guidelines for Management of Bat-Related Incidents at Children's Camps**

- Bats observed flying at night **outside**
  - provide general education to all camp staff and camp attendees about bats and risk of rabies, avoiding exposures, and reporting possible exposures
- Bat observed flying outside in **daytime**
  - provide general education to all camp staff and camp attendees about bats and risk of rabies, avoiding exposures, and reporting possible exposures (note: if bat appears to be aggressively and deliberately swooping at people, keep campers away from area, capture bat, and submit for rabies testing)
- Bat found outside **grounded** or **roosting in camper accessible location**
  - restrict access to area
  - temporarily contain bat, for example with an inverted pail or coffee can
  - capture bat
  - report incident to county health authority
  - submit bat for rabies testing
- **Bat flying in or roosting in** camper-occupied building
  - Building large, no children are present unattended:
    - evaluate situation for potential risk, consider exclusion and bat-proofing as soon as possible
  - Building small, leading to close proximity of bat to occupants, and children are present:
    - leave one person in building to observe bat
    - remove campers from building, as well as adults who will not be involved in capturing the bat
    - make a list of building occupants while they exit the building or immediately afterwards
    - capture bat
    - report incident to county health authority
    - submit bat for rabies testing
- Bat present **indoors** with **sleeping adults or unattended children**
  - leave one person in building to observe bat
  - remove campers from building, as well as adults who will not be involved in capturing the bat
  - make a list of building occupants while they exit the building or immediately afterwards
  - capture bat
  - report incident to county health authority
  - submit bat for rabies testing
- Known or suspected **contact** with a bat
  - capture bat
  - immediately make list of those with possible contact
  - have those persons with possible contact wash the area of potential contact with soap and water
  - report incident to county health authority
  - submit bat for rabies testing
  - depending on severity, consider having wounds evaluated by health care provider for medical treatment