RABIES

For additional information on the prevention of rabies and management of possible exposure, please refer to the Canadian Immunization Guide at http://www.phac-aspc.gc.ca/publicat/cig-gci/p04-rabi-rage-eng.php.

1] Reporting Requirement

Notify your Zone CD Nurse and EHO (Environmental Health Officer) immediately for persons meeting the following case definitions for rabies.

Case Definition

CONFIRMED CASE

Laboratory confirmation of infection with clinically compatible signs and symptoms:

- Detection of viral antigen in an appropriate clinical specimen, preferably the brain or the nerves surrounding hair follicles in the nape of the neck, by immunofluorescence

or

- Isolation of rabies virus from saliva, cerebrospinal fluid (CSF), or central nervous system tissue using cell culture or laboratory animal

or

- Detection of rabies virus ribonucleic acid (RNA) in an appropriate clinical specimen (for example: saliva)

PROBABLE CASE

Signs and symptoms clinically compatible with the following laboratory results:

- Demonstration of rabies-neutralizing antibody titre ≥ five (i.e. complete neutralization) in the serum or CSF of an unvaccinated person

2] Clinical Manifestations

Rabies is an acute viral infection with rapidly progressive central nervous system manifestations. Once symptoms of the disease develop, rabies is nearly always fatal (within 7 to 10 days). Transmission is usually through saliva via a bite from an infected animal. Early symptoms may include headache, malaise, fever and fatigue and a sense of apprehension.

The more common form of rabies presents classic symptoms of excitability, aerophobia (aversion to air) and hydrophobia (aversion to water), often with spasms of swallowing muscles. The paralytic form manifests as progressive paralysis of limbs, is more protracted and difficult to diagnose. Coma and death ensue within one to two weeks.

3] Description of Pathogen

AGENT

Rabies virus is a ribonucleic acid (RNA) virus of the *Rhabdoviridae* family, Lyssavirus. There are different antigenic variants of rabies virus distinguished by laboratory testing. Specific variants tend to occur in specific species of animals, although these variants can be found in other species as well.

TRANSMISSION

Most common method of exposure is virus-laden saliva from a rabid animal introduced through bites, scratches or other contact with mucosal membranes or open skin.

Person to person transmission is possible but rare and not well documented. Airborne spread is rare but possible in caves where heavy infestations of bats roost.

Transmission through corneal, solid organ and blood vessel transplant from unsuspected rabies cases has occurred.

SUSCEPTIBILITY

All mammals are susceptible. The degree of susceptibility may be influenced by the virus variant as well as by certain host parameters (i.e. age, health, nutrition, etc.)

Humans may be more resistant to infection than several other animal species.

INCUBATION

The incubation period in humans is usually three to eight weeks. Rarely it can be as short as a few days or as long as several years.

The length of the incubation period depends on wound severity, wound location in relation to nerve supply, and relative distance from the brain.

In animals, the incubation period can be two weeks to many months.

PERIOD OF COMMUNICABILITY

Rabid animals are infectious from the time the virus reaches the salivary glands until death. Death usually occurs within one week of onset of clinical signs.

The period of communicability in domestic dogs, cats and ferrets, is usually for three to seven days before the onset of clinical signs and throughout the course of the disease (rarely over four days).

Excretion in other animals is highly variable (i.e. bats shed the virus for 12 days before evidence of illness while skunks shed the virus for eight days before the onset of clinical signs).

RESERVOIR

All mammals are potential reservoirs, including but not limited to wild and domestic animals such as dogs, foxes, coyotes, wolves, jackals; also skunks, racoons, mongooses, cats, bats.

Other mammals (rodents) such as rabbits, squirrels, chipmunks, rats, mice and opossums rarely get infected.

In North America the main reservoirs in wild animals are foxes, coyotes, wolves, skunks, raccoons and bats.

In animals with rabies, either of two syndromes (or a combination of them) may occur:

Furious Rabies
The animal may exhibit the following behaviours:

- Wander aimlessly – usually in a straight line
- Show excitement, restless, irritable
- Attack and bite inanimate or moving objects
- Eat cloth, soil, stones or sticks
- Gnaw and bite their own limbs
- Have a change in bark
- Have lower jaw sag/hang, muscle paralysis, salivation and convulsion
- Have total or partial inability to coordinate voluntary body movements, paralysis and death.

Dumb (or Paralytic) Rabies
The animal may exhibit the following behaviours:

- The animal rarely bites, is not irritable
- Change of tone in bark – hoarse bellow
- Signs may resemble choking
- Paralysis of facial muscles
- Yawning movements, salivation
- Lethargic, progressive paralysis and death

4] LABORATORY INVESTIGATIONS

HUMANS

LABORATORY CONFIRMATION

Any of the following will constitute a confirmed case of rabies:

- Positive for rabies antigen
- Positive rabies virus culture
- Positive nucleic acid amplification test (NAAT) for rabies virus

APPROVED/VALIDATED TESTS

- Immunofluorescence for rabies virus antigen
- Standard culture for rabies virus
- NAAT for rabies virus RNA
- Neutralizing antibody titres for rabies virus

INDICATIONS AND LIMITATIONS

- Negative results do not rule out rabies infection because viral material may not be detectable (for example: early in infection). CSF frequently remains negative.
- The presence of rabies-neutralizing antibodies can indicate an exposure to rabies virus antigen or passive immunization.
- Negative serological results do not rule out a rabies infection because antibody levels may surpass the detection threshold (0.5 IU) and seroconversion is usually very late.
- The sensitivity and specificity of serological tests vary greatly from laboratory to laboratory

in spite of the application of international standards.

- Immunofluorescence on unfixed brain tissue is the only recommended test for post-mortem diagnosis.

ANIMALS

Infection in animals is confirmed by a positive fluorescent antibody test from CNS tissue.

Suspected rabid animals should be euthanized in a manner that preserves brain tissue for appropriate laboratory diagnosis. Rabies should be suspected in an animal if it exhibits non-specific CNS clinical signs (ataxia, abnormal vocalization, biting and eating abnormal objects, aggression, etc.) in which rabies is a differential diagnosis, where there is a supportive history of potential exposure and where the local geographic rabies epidemiology supports the possibility of rabies.

5] TREATMENT

- Treatment of rabies in humans is supportive; there is no effective established therapy once clinical disease develops.

- Consultation with neurology, ICU and/or infectious diseases is strongly recommended.

INFECTION CONTROL MEASURES

- Routine practices in health care.

- Articles in contact with saliva must be cleaned and disinfected following Routine Practices.

6] PUBLIC HEALTH MANAGEMENT OF SUSPECTED RABIES EXPOSURES

A) Risk Assessment

The investigator should collect the following information following any bite or non-bite exposure to a suspected rabid animal or following any bat exposure:

- Animal species and description involved in the incident

- The rabies epidemiology in the local geographic area (discuss with EHO)

- The rabies epidemiology in the animal species in question (if animal is wild)

- Animal behaviour

- Exposure circumstances (for example: was the exposure provoked or unprovoked, was it caused by a bite, non-bite or bat exposure)

- If incident involves a domestic animal, investigate animal's previous contact with wild animals, animal's rabies immunization status and obtain owners contact information

- Date, type, and anatomical location of exposure, including if the skin has been broken or if there is a mucous membrane exposure

- Demographics of the exposed individual (age, sex, location, address)

- Immune status of the exposed person, including date of last immunization, type of vaccine used (HDCV, PCECV or other)

BITE EXPOSURE

Bite exposure is defined as the penetration of the teeth through the barrier of the skin.

NON-BITE EXPOSURE

Non-bite exposure is defined as saliva or neural tissue being introduced into flesh, open cuts or scratches in skin or onto mucous membranes. Note: post-exposure prophylaxis is not indicated unless the non-bite exposure involves saliva or neural tissue being introduced into fresh, open cuts or scratches in the skin or onto mucous membranes. The risk assessment must consider the likelihood of salivary contamination.

BAT EXPOSURE

Bat exposure is defined as:

- Direct contact with a bat (ie. the bat touches or lands on a person) **AND**
- A bite, scratch, or saliva exposure into a wound or mucous membrane cannot be ruled out.

In a child, any direct contact with a bat could be considered a reason for post-exposure prophylaxis

(PEP) administration, as a history to rule out a bite, scratch or mucous membrane exposure may not be reliable.

See Table 1 for additional information on risk assessments.

B) Management of the Animal

The EHO must be notified to begin an investigation of an animal.

If the incident involves a domestic animal:

- The EHO or designate will contact the owner for additional information regarding the animal's behaviour, animal vaccination status and to make arrangements with the owner to have the animal isolated for a minimum of 10 days to monitor for change in behaviour or signs of rabies.
  - An EHO or designate will either see the animal or conduct a telephone interview with the owner during and after the 10 day period.
  - Animals overdue for a booster should be vaccinated within 14 days of the completion of the observation period.
  - If the owner refuses to isolate the animal, work with Chief and Council and EHO to determine how to proceed.

If the incident involves a wild, stray or unknown animal:

- If animal is not found:
  - The exposed individual will undergo a risk assessment and discuss post exposure prophylaxis with a physician.
- If animal is found:
  - Euthanize immediately (preserving the head) and send sample for testing.

C) Management of the Exposed Individual

The purpose of post-exposure management is to prevent the rabies virus at the wound site from entering the central nervous system. Any wound must be immediately and thoroughly cleaned and flushed with soap and water to the full depth of the wound for 15 minutes, which may be the most effective procedure in the prevention of rabies. Suturing should be avoided if possible, and tetanus vaccination and antibiotics should be given as appropriate. Bites on the hands and face are considered higher-risk exposures because of the density of nerve endings.

Consult with the treating physician regarding the administration of rabies immunoglobulin (RabIg) and rabies vaccine. Authorization by a Medical Officer of Health or delegate is required for release of post exposure prophalaxis (PEP) from local Public Health Units following a risk assessment.

- The CHN will interview the exposed individual to determine if others may have been exposed to the same animal.
- The CHN will report any bite or other exposure to the treating physician.
- The CHN will complete the Rabies Exposure Report Form and forward to the Environmental Health Officer (EHO) and CD nurse.

POST EXPOSURE PROPHALAXIS (PEP)

If exposure to rabies is considered highly likely, PEP should be started as soon as possible after the exposure. However, if initiation of PEP is delayed until test results of the animal are available, the maximum period of delay before starting PEP is 48 hours (if PEP has already been initiated and the animal tests negative, discontinue PEP). When there is a known bat exposure, PEP should be initiated immediately because of the higher prevalence of rabies in bats.

If the suspect animal is a dog, cat or ferret that is healthy and available for observation, post-exposure prophylaxis may be withheld pending the animal's status after a 10-day observation period. However, if the animal has or develops signs suggestive of rabies, post-exposure prophylaxis of exposed persons should be initiated immediately.

Post-exposure prophylaxis of previously unimmunized individuals consists of both Rabies Immune Globulin (RabIg) and rabies vaccine. The RabIg provides immediate passive protection until the exposed person mounts an immune response to the rabies vaccine.

RABIES IMMUNE GLOBULIN

The recommended dose of RabIg is 20 IU/kg of body weight for all age groups, including children and should be given on the first day of the initiation of the rabies vaccine series (day 0). If RabIg is not administered as recommended at the initiation of therapy, RabIg can be administered up to day 7 after vaccine is initiated. Because of possible interference of RabIg with the immune response to the rabies vaccine, the dose of RabIg should not be exceeded.

If possible, the full dose of RabIg should be thoroughly infiltrated into the wound and surrounding area. If not anatomically feasible, any remaining volume of RabIg should be injected, using a separate needle and syringe, intramuscularly at a site distant from the site of vaccine administration. When more than one wound exists, each wound should be locally infiltrated with a portion of the RabIg using a separate needle and syringe. In such instances, the RabIg can be diluted twofold to threefold in a solution of 0.9% sodium chloride in order to provide the full amount of RabIg required for thorough infiltration of all wounds. If the site of the wound is unknown, the entire dose should be administered intramuscularly at separate sites from where the rabies vaccine is administered.

RABIES VACCINE

The IM dose for the vaccine is 1.0 ml. Each 1.0 ml dose of Human diploid cell vaccine (HDCV) or Purified chick embryo cell culture vaccine (PCECV) contains at least 2.5 international units (IU) of rabies antigen. Rabies vaccine should never be administered in the gluteal muscle due to variable absorption.

Unimmunized Immunocompetent Individuals

The first dose of rabies vaccine, for previously unimmunized immunocompetent persons, should be administered as soon as possible after exposure (Day 0). Additional doses should be administered on days 3, 7, and 14 after the first vaccination, for a total of four separate doses.

Unimmunized Immunocompromised Individuals

Unimmunized immunocompromised persons (including those taking corticosteroids or other immunosuppressive agents, and those who have immunosuppressive illnesses) and those taking chloroquine and other antimalarials should receive five doses of rabies vaccine on days 0, 3, 7, 14 and 28 with one dose of RabIg on day 0.

Previously Immunized Individuals

RabIg should not be given to someone who has been previously immunized.

In previously appropriately immunized individuals who require post-exposure prophylaxis, two doses of either HDCV or PCECV vaccine are recommended. The first dose should be administered immediately followed by the second dose 3 days later. For more details on what is considered to be appropriate rabies immunization please see Table 2 below, and the Canadian Immunization Guide, Part 4 http://www.phac-aspc.gc.ca/publicat/cig-gci/index-eng.php.

Serologic Testing

Because of the excellent immune response to rabies vaccine, healthy people immunized with an appropriate regimen do not require routine antibody testing after pre or post- exposure rabies vaccination, unless one of the following applies:

- Pre – exposure vaccination was given by the intradermal (ID) route. Check serology at least two weeks after completion of the series
- There has been substantial deviation from the recommended post – exposure schedule. Check serology 7 to 14 days after completing the series
- The person has been immunized with a vaccine other than HDCV or PCECV. Check serology 7 to 14 days after completing the series.

Storage

Both the vaccine and RabIg must be stored between 2^{o} and 8^{o} C. Once reconstituted, the vaccine should be administered promptly.

Administration with Other Vaccines

There is no evidence that the administration of immune globulins interferes with the response to inactivated vaccines, or live vaccines for polio or yellow fever. However, an interval of 4 months should be maintained between the administration of immune globulins and

MMR, MMRV or varicella vaccines. If MMR, MMRV or varicella vaccines were received less than 14 days prior to the administration of the immune globulin, they should be repeated 4 months after the immune globulin is administered, or serologic tests should be completed.

Adverse Events

HDCV

Local injection site reactions such as pain, erythema, swelling, pruritus and induration at the injection site were reported in 60% to close to 90% of recipients. Mild systemic reactions such as headache, nausea, abdominal pain, muscle aches and dizziness were reported in about 6% to 55% of recipients.

Anaphylactic reactions to this vaccine have occurred in up to 1 in 10,000 vaccine recipients. Systemic allergic reactions with generalized urticaria and accompanied in some cases by arthralgia, angioedema, fever, nausea and vomiting have been reported. These reactions are uncommon in individuals receiving primary immunization.

PCECV

Local injection site reactions were reported in 11% to 57% of recipients, consisting of pain, tenderness, swelling, erythema and induration at the injection site lasting for 2 to 3 days. Systemic reactions are generally less common (i.e. 1% to 10% of recipients) and may consist of malaise, myalgia, arthralgia, headache and fever. Lymphadenopathy, nausea and rash have been reported occasionally.

Anaphylaxis following immunization has been reported, although causal association with vaccination has not been established.

RabIg

Local injection site pain, erythema and induration are commonly reported following administration of RabIg, as are systemic reactions such as headache and low-grade fever. The majority of reported events were mild.

8] General Preventive Measures

Pre-Exposure Immunization

Pre-exposure vaccination is recommended for people who work in close contact with animals. Veterinarians and veterinary staff, animal control and wildlife workers, and laboratory workers who handle the rabies virus are at higher risk for exposure to rabies. Individuals who engage in activities such as hunting and trapping or cave exploration (spelunkers) which place them in close contact with potentially rabid animals such as bats, foxes, skunks and raccoons, in areas where rabies is found, may also be considered at higher risk of rabies exposure.

Children are considered at higher risk for exposure to rabies because they often play with animals and are less likely to report bites or scratches. Risk to travelers varies depending on itinerary, purpose and duration of the trip, as well as activities and access to medical care.

Three doses of HDCV or PCECV vaccine are required and should be given on days 0, 7 and any time between days 21 to 28 as a 1.0 ml IM dose.

Pre-exposure immunization is not publicly funded in Ontario. High-risk individuals who would like to be immunized for rabies should be directed to their medical practitioner and local pharmacy.

Prevention of Rabies in Pets

Register, licence and vaccinate all owned dogs and other pets (if applicable within the First Nation community); control ownerless animals and strays.

Educate pet owners and the public on the importance of local community responsibilities (for example: pets should be leashed, avoid strange acting animals, wildlife should be enjoyed as nature and not kept as pets).

Table 1: Risk Assessment Related to the Exposure to the Potentially Rabid Animal
This table and accompanying text are guides for management and do not replace clinical judgement.

Factors to Consider
Animal
How prevalent is rabies in the species of animal involved in the exposure? *In North America, rabies occurs mainly in bats, foxes, skunks, raccoons and stray dogs and cats.*
Is the animal a domestic pet, wild animal or stray animal? *Domestic dogs and cats are less likely to be rabid than stray dogs or cats. Clinical signs of rabies in wild animals cannot be interpreted reliably.*
Is the wild animal available for testing? *In the event of exposure to a fox, skunk, raccoon or bat in areas where rabies is known to occur in these animals, post-exposure prophylaxis should begin immediately unless the animal is available for rabies testing and rabies is not considered likely. Post-exposure prophylaxis should not be delayed beyond 48 hours while waiting for test results in wild animals.*
Is the dog, cat or ferret available for observation? *If the dog, cat or ferret is healthy after a 10-day observation period, the animal would not have been shedding rabies virus in their saliva and would not have been infectious at the time of the exposure.*
If the dog, cat or ferret is available, is it clinically healthy? *If the dog, cat or ferret has or develops signs of rabies, post-exposure prophylaxis should be initiated as soon as possible.*
Was the animal behaving unusually? *Abnormal behaviour in a domestic pet may indicate that the animal is rabid. Generally, it is not possible to assess animal behaviour in wild animals.*
If the animal is a domestic pet, what is the vaccination status of the animal? *Domestic pets with up-to-date rabies vaccination are unlikely to be infected with rabies.*
If the animal is a domestic pet, has it been exposed to wild or outdoor animals? *Rabies may be transmitted to domestic pets during exposure to rabid wild or outdoor animals. Indoor animals have little opportunity to be exposed to rabid animals.*
Geographic
In what geographic area did the exposure occur?*
How prevalent is rabies in the involved species in the geographic area?
How prevalent is rabies in other animal species in the geographic area?
Exposure
What was the type of exposure: bite, non-bite or bat? *Transmission rarely occurs from non-bite exposures. Petting a rabid animal or handling its blood, urine or feces are not considered exposures.*
Can a bite or saliva exposure into a scratch, wound or mucous membrane be ruled out? *Rabies transmission occurs most commonly through a bite. Aerosol transmission is rare as is transmission when scratches, wounds, or mucous membrane are contaminated from saliva or infected neural tissue.*
What were the circumstances of the exposure (e.g., provoked or unprovoked attack)? *An unprovoked attack is more likely to indicate that the animal is rabid.*
Person
What is the age of the exposed person? Is the exposed person able to provide a reliable history? *The history obtained from a child may be difficult to interpret and, potentially, unreliable. Assessment of the exposure may also be difficult in a cognitively impaired adult.*
What is the location and severity of the wounds? *Bites on the face, neck or hand are considered higher-risk exposures due to the density of nerve endings in these areas. More severe bites may suggest the animal is rabid and also provide more opportunity for transmission.*

* Refer to the table of positive rabies by Canadian jurisdiction available at: http://www.inspection.gc.ca/english/anima/rabrag/statse.shtml and the map of global areas where rabies transmission occurs available at: http://who.int/rabies/Global_Rabies_ITH_2008.png

Source: Canadian Immunization Guide. http://www.phac-aspc.gc.ca/publicat/cig-gci/p04-rabi-rage-eng.php

Table 2: Summary of Post-exposure Prophylaxis for Persons Potentially Exposed to Rabies, by Animal Type (Refer to text for details)

Animal species	Condition of animal at time of exposure	Management of exposed persons *not* previously immunized against rabies	Management of exposed persons previously immunized against rabies
Dog, cat or ferret	Healthy and available for a 10-day observation period	1. Local treatment of wound 2. At first indication of rabies in the animal, give RabIg and begin four or five doses of HDCV or PCECV. 3. At first indication of rabies in the animal, arrange to have the animal tested for rabies.	1. Local treatment of wound 2. At first indication of rabies in the animal, begin two doses of HDCV or PCECV. 3. At first indication of rabies in the animal, arrange to have the animal tested for rabies.
	Unknown or escaped	1. Local treatment of wound 2. Consult public health officials for risk assessment	1. Local treatment of wound 2. Consult public health officials for risk assessment
	Rabid or suspected to be rabid *	1. Local treatment of wound 2. RabIg and begin four or five doses of HDCV or PCECV. 3. Arrange to have animal tested for rabies if available.	1. Local treatment of wound 2. Begin two doses of HDCV or PCECV. 3. Arrange to have animal tested for rabies if available.
Skunk, bat, fox, coyote, raccoon and other carnivores.	Regard as rabid * unless geographic area is known to be rabies-free	1. Local treatment of wound 2. Post-exposure prophylaxis with RabIg and four or five doses of HDCV or PCECV should begin immediately. If animal is available for rabies testing, in some instances post-exposure prophylaxis may be delayed for no more than 48 hours while awaiting results. 3. Arrange to have animal tested for rabies if available.	1. Local treatment of wound 2. Post-exposure prophylaxis with two doses of HDCV or PCECV should begin immediately. If animal is available for rabies testing, in some instances post-exposure prophylaxis may be delayed for no more than 48 hours while awaiting results. 3. Arrange to have animal tested for rabies if available.
Livestock, rodents or lagomorphs (hares and rabbits)	Consider individually. Consult appropriate public health and CFIA officials. Bites of squirrels, chipmunks, rats, mice, hamsters, gerbils, guinea pigs, other small rodents, rabbits and hares would only warrant post-exposure rabies prophylaxis if the behaviour of the biting animal was highly unusual. Bites from larger rodents (e.g., ground hogs/woodchucks, beavers) require a risk assessment.		

RabIg = human rabies immune globulin, HDCV = human diploid cell vaccine, PCECV= purified chick embryo cell culture vaccine

* If possible, the animal should be humanely euthanized and the brain tested for rabies as soon as possible; holding for observation is not recommended. Discontinue vaccine if rabies testing of the involved animal is negative.

Source: Canadian Immunization Guide. http://www.phac-aspc.gc.ca/publicat/cig-gci/p04-rabi-rage-eng.php

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Rabies Facts

1. What is rabies?

Rabies is a virus that affects the brain of mammals, including humans. Once symptoms appear, rabies almost always causes death.

In North America, bats, foxes, skunks and raccoons are the most common animals that spread the disease.

2. What causes rabies?

Rabies is spread from an infected mammal to another mammal (including humans) through saliva. This can happen in three main ways:

- Biting
- Saliva with the virus getting in an open cut, sore or wound
- Saliva with the virus touching the mouth, nose or eyes.

3. What are the symptoms of rabies?

In humans, rabies usually begins with fever, cough, or sore throat and is followed in several days by more serious symptoms such as hallucinations (seeing things that aren't there), coma, seizures and death.

Animals with rabies may show different signs. The disease can appear in two forms:

<u>Dumb rabies</u>

- Domestic animals may become depressed and try to hide in isolated places.
- Wild animals may lose their fear of humans and appear unusually friendly.
- Wild animals that usually only come out at night may be out during the day.
- Animals may have paralysis. Areas most commonly affected are the face or neck (which causes abnormal facial expressions or drooling) or the hind legs.

<u>Furious rabies</u>

- Animals may become very excited and aggressive.
- Periods of excitement usually alternate with periods of depression.
- Animals may attack objects or other animals. They may bite or chew their own limbs.

4. Who is at most risk for the disease?

All mammals can become infected. People who work in close contact with animals are at higher risk for rabies, such as:

- Veterinarians and veterinary staff
- Animal control and wildlife workers
- Laboratory workers who handle the rabies virus
- Hunters
- Individuals who trap or explore caves (spelunkers)

Children are at higher risk for exposure to rabies because they often play with animals and are less likely to report bites or scratches. Risk to travelers depends on where they are travelling to, purpose and length of the trip, as well as activities and access to medical care.

5. How is rabies treated?

After a bite or a scratch, it is important for the person to clean the area with soap and water for 15 minutes.

If necessary, immunization will be started as soon as possible regardless of the time since the exposure.

6. How can I reduce the risk of rabies?

- Inform authorities when an animal is suspected of having rabies
- Don't feed, touch or adopt wild animals, stray dogs or cats
- Avoid contact with animals that look sick or act strange (for example: aggressive, paralyzed, disoriented or unusually tame)

- Teach children not to touch any animal they do not know and to tell an adult immediately if they are bitten or scratched by any animal
- Be sure pets are up-to-date with their rabies vaccinations. Vaccination protects pets if they are exposed to rabid animals. Pets too young to be vaccinated should be

  kept indoors and allowed outside only under direct observation
- Keep family pets indoors at night. Don't leave them outside unattended or let them roam free
- If a wild animal is on your property, let it wander away. Bring children and pets indoors and alert neighbours who are outside
- Report all animal bites to your health care provider