



## Clinical Practice Guidelines

**TITLE: Animal Bite / Exposure Management Guidelines for Public Health Nurses**

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### 1.0 PURPOSE

- 1.1 To provide timely public health investigation of individuals who have experienced animal bites/exposures by assessing the exposure for the potential risk of rabies, and guide decisions about the need for post exposure prophylaxis against rabies virus.

### 2.0 SCOPE AND GOAL

- 2.1 This guideline is applicable to Public Health Nurses (PHN) working within Community Area teams.
- 2.2 To guide the follow-up for all reported animal bites/exposures that have potential for rabies infection.
- 2.3 To provide guidance on the risk assessment and process where the animal is not likely to be found for observation or testing.
- 2.4 Improve the flow of communication with the client and other partners.

### 3.0 DEFINITIONS

- 3.1 **Exposure:** An exposure is defined as a bite, scratch, or contact of saliva or infected tissue with an open wound or mucous membrane of the exposed individual. Petting or contact with blood, urine or feces of a rabid animal does not qualify as an exposure. Skunk spray is not known to contain active rabies virus.
- 3.2 **Risk Assessment:** The risk assessment (see section 5.3.4) is the **most important** function in follow-up to an exposure to an unfound animal. The decision to offer rabies post-exposure prophylaxis is made on subjective information determined from the risk assessment. This decision should be made as soon as possible after the receipt of the referral



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### 4.0 BACKGROUND

4.1 Human rabies is almost always fatal. In all animal bite/exposure situations, the primary public health goal is to ensure the animal was not infectious for rabies at the time of client's exposure. There are only two ways to meet this goal with certainty:

4.1.1 Confirm that the animal (dogs, cats, ferrets) is alive and well, ideally on the same day the referral is received but not more than 10 days after the bite/exposure. If an apparently normal dog, cat or ferret attacks a client while being infectious for rabies, then a 10-day observation period would be an adequate time to observe for the development of clinical symptoms in the animal, such as neurologic signs, behavioural changes or lethargy OR

4.1.2 Confirm the animal tested negative for rabies on postmortem lab test.

4.2 If the goal cannot be met, the decision about rabies prophylaxis must be made based on a risk assessment considering the unique circumstances of each bite/exposure (see 5.3 Risk Assessment).

### 5.0 PROCEDURE

#### 5.1 REFERRAL/INTAKE PROCESS

5.1.1 Bites/exposures come to the attention of public health from a variety of sources. (E.g. Health Links-Info Santé, Emergency Department staff, physician's offices, public calls to public health offices, After Hours public health on-call system, CFIA etc). WRHA Public Health intake for all animal bite/exposures is through the central CD Clerk at 490 Hargrave Street (940-2081) during business hours.

5.1.2 Investigation of **MOST** animal exposures shall be initiated within 24 hours of receipt of referral to ensure more timely decision making and case management.

#### 5.2 ROLES AND RESPONSIBILITIES

5.2.1 The Animal Exposure Investigation Algorithm (Appendix 1) is designed to assist those who are involved in triage, referral and investigating animal exposures.



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5.2.2 The following outline provides a brief summary of roles and responsibilities:

### The Communicable Disease (CD) Clerk

- Enters all animal bite/exposure incidents into iPHIS
- Sends a standard letter (Letter # 1) for low risk possible rabies exposures involving a known pet with no need for community area PHN involvement.

### The Communicable Disease (CD) Coordinator

- Triages all bites/exposures
- Flags all **High Risk Exposures** at the time of referral and initiates contact with the Community Area PHN by phone. (High Risk Exposures include exposure to a known rabid animal, wild non-rodent animal, bat, or a suspiciously behaving dog or cat or exposures that occur in countries where animal rabies is more prevalent. See High Risk Exposure Investigation -- Appendix 2)
- Consults with the MOH as needed.
- Notifies Manitoba Health Rabies Central for animal specimen collection to be sent to CFIA for rabies testing at 204-788-8666 along with completion and fax of Report of Suspected Rabies Exposure form. (see link below)  
<http://www.gov.mb.ca/health/publichealth/cdc/protocol/form9.pdf>
- Reviews all exposures in order to close within 10 days of the exposure and to check for missed high-risk histories.

### The Community PHN

- Responds to all rabies exposures referrals from the CD coordinator.
- Responds to all rabies exposure referrals that are received via iPHIS following the usual referral process.



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- Makes initial contact with exposed client by phone or in-person (when barriers exist to phone interview) to gather information and assess risk in all instances, except for those that are low-risk involving a client's own pet that are managed by CD Clerk.
- Conducts a risk assessment on all referrals that are received.
- If unable to contact the client, PHN must rely solely on the referral information to conduct the risk assessment.
- Follows up on all cases of **High-risk exposures** or exposures where testing is initiated.
- Follows up with the CD Coordinator if the history of the exposure is unusual, or concerning, and rabies prophylaxis may be considered appropriate OR if client is insistent on vaccine. (Ideally, this scenario should be resolved on the day of receipt of the referral to determine if the client will follow the High Risk Exposure Investigation.)
- Consults with the CD coordinator as necessary to verify the PHN's assessment based on the history of the exposure, whether the animal has been located or not, and to confirm whether, or not, the case meets the criteria for rabies prophylaxis.
- Informs the client of their risk assessment and indicates whether prophylaxis is recommended or not. Provides appropriate instructions to the client: For example observe a located animal (as advised in Letter #3) or continue to look for the unlocated animal (as advised in Letter #4). Clients should be encouraged to call City of Winnipeg Animal Services via 311 to report animal exposures where animal services may play a role. Refer to the Management of Exposure section for other examples.
- NOTE: If PHN needs to follow-up with City of Winnipeg Animal Services to determine the status of the animal at Day 10, contact



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311 and request a service call back from Animal Services leaving the PHN name and call back #. The service request is then transmitted to an Animal Services officer through their software with a timeline to be responded to.

- If animal is situated in another region contact CD Coordinator for further follow-up with that region.
- Ensures the client feels welcome to contact the PHN with any further questions or concerns, or if the situation changes.
- Informs the client that the issue will be considered resolved if there is no contact from the client within the 10 day period after the bite.
- Documents in iPHIS.

### The Medical Officer of Health (MOH)

- Provides recommendation on all high risk cases, including exposures involving unlocated animals, or cases with unusual features.
- Recommends and approves rabies post exposure prophylaxis.
- Recommends and approves testing of animal specimens.



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### 5.3 TRIAGE, INVESTIGATION AND RISK ASSESSMENT

- 5.3.1 Animal exposures are referred to community area PHNs for investigation to determine the level of rabies risk. Risk level depends on a number of factors such as the type of animal and nature of the animal behaviour at the time of the exposure.
- 5.3.2 A Risk Assessment **must be** attempted and/or completed for every referral that is received to determine the risk of transmission of rabies and to understand the circumstances of each exposure. After completing the risk assessment, the PHN will contact the CD coordinator to review the assessment and to discuss management of the exposure. (See section 5.4 for management of exposures.)
- 5.3.3 **NOTE: The risk assessment is particularly important when the animal is not located as it forms the basis on which prophylaxis decisions can be made.**
- 5.3.4 The following **Animal Exposure Risk Assessment Screening Tool** highlights the key considerations that should be assessed by the PHN.

#### Animal Exposure Risk Assessment Screening Tool

Category	Lower Risk	Higher Risk
<b>Wild Animal</b>	Rodents, squirrels, rats, chipmunks, wild rabbits and hares	Skunks, bats, raccoons, coyotes, bobcats, other wild carnivores.
<b>Domestic Animal</b>	Gerbil, hamster, guinea pig, mouse, rabbit	Dog, cat, ferret
<b>Livestock</b>		Must be considered individually
<b>Circumstances of the bite</b>	Provoked – Predictable normal animal reaction to human action	Unprovoked – Unpredictable animal reaction to human action



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Category	Lower Risk	Higher Risk
<b>Behavior of the Animal</b>	Normal	Any neurological symptoms, gait disturbances, or even lethargy are concerning for higher risk,
<b>Status of the Animal</b>	Healthy domestic pets	Stray dog/cat, sick domestic pets
<b>Geographic area where the exposure took place</b>	Within Winnipeg; urban areas	<ul style="list-style-type: none"> <li>• Outside Winnipeg</li> <li>• Within the vicinity of the rivers or a park</li> <li>• On the outskirts of the city</li> <li>• In proximity to wild life</li> </ul>
<b>Recent experiences &amp; reports of Rabies in the region<sup>‡</sup></b>	No dogs or cats are known to have acquired rabies in Winnipeg over several decades	In general, higher rabies prevalence in animals outside the city
<b>Rabies immunization</b>	If animal was up to date with rabies immunizations within three years – lower risk	If unknown rabies immunization history then higher risk.
<b>Nature of the exposure</b>	<ul style="list-style-type: none"> <li>• Skin intact (No risk)</li> <li>• Scratch</li> <li>• Single wound</li> </ul>	<ul style="list-style-type: none"> <li>• Bite</li> <li>• Open wound</li> <li>• Multiple wounds</li> </ul>
<b>Anatomical location of the bite</b>	<ul style="list-style-type: none"> <li>• extremities</li> </ul>	Facial or upper torso bites are considered higher risk for shorter incubation periods for rabies

<sup>‡</sup>Note: **Cycling endemicity** -- The level of rabies in a geographic location is thought to cycle over time along with the skunk population, and may be higher at times due to the cycle. Although risk in the city limits may be lower than outside the city limits, the overall risk may be higher in peak times.



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### 5.4 MANAGEMENT OF EXPOSURES

5.4.1 The level of risk and circumstances related to each exposure will ultimately determine how the case will be managed however the following table can be used as a guide:

Risk Level	Examples	Management
Unknown	<b>Limited information on the referral and unable to contact client</b>	<ul style="list-style-type: none"> <li>PHN will continue attempts to contact by phone or door stop visit to client if the exposure has the potential to be of higher risk.</li> <li>PHN will send <b>Letter #2</b> If the exposure does not have high risk features on the limited information from the referral</li> <li>If still no contact after 10 days, PHN will close the case with the understanding that the case can always be opened again if client does respond to the letter.</li> </ul>
Lower Risk	<b>Dogs, Cats or Ferrets known to the client</b>	<ul style="list-style-type: none"> <li>CD clerk will send <b>Letter #1</b> as per CD Coordinator's recommendation which advises to watch for abnormal behaviour.</li> <li>PHN does not need to be involved in case where pet is known to client.</li> </ul>
	<b>Low Risk Wild Animals</b> Exposures to squirrels, rats, chipmunks, wild rabbits and hares	<ul style="list-style-type: none"> <li>PHN will provide reassurance that species is not a reservoir for rabies virus</li> <li>Rarely call for testing or anti-rabies prophylaxis except in exceptional circumstances; these animals are rarely infected, and if infected usually die soon after exposure. Occasionally, an unusual behaving animal in this category has been tested.</li> </ul>



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Risk Level	Examples	Management
	<b>Domestic animals not dogs, cats or ferrets</b> Healthy wild mice or pet gerbils, hamsters, guinea pigs, rats, or rabbits.	<ul style="list-style-type: none"> <li>PHN will provide reassurance that species is not a reservoir for rabies virus and those which have never been outside of a building can be considered to pose no risk for rabies transmission</li> </ul>
	<b>Dogs, Cats or Ferrets available for observation for 10 days</b>	<ul style="list-style-type: none"> <li>See Appendix #1 Animal Exposure Investigation and send <b>Letter #3</b>, which advises to ensure animal is observed for 10 days and remains healthy.</li> <li>Advise to contact City of Winnipeg Animal Services if owner is deemed unable or unlikely to observe for 10 days reliably or if animal is stray and may be located by Animal Services</li> </ul>
	<b>Unobservable Animal, not available for testing</b>	<ul style="list-style-type: none"> <li>See Appendix #1 Animal Exposure Investigation. If client is unlikely to find animal but exposure is considered to be <b>low risk for rabies</b> based on PHN risk assessment, (after consultation with CD coordinator), then advise no RPEP required and send <b>Letter #4</b>. Advise client to call back if not comfortable with recommendation, or if any further concerns (e.g. animal seen but sick/dying)</li> </ul>
Higher Risk	<b>High Risk Wild Animals</b> Skunks, bats, raccoons, coyotes, bobcats, other wild carnivores	<ul style="list-style-type: none"> <li>See Appendix #2 High Risk Exposure Investigation</li> <li>These animals are known reservoirs and sources of rabies virus and immediate investigation is required.</li> </ul>
	<b>Unobservable Animal, not available for testing</b>	<ul style="list-style-type: none"> <li>See Appendix #1 Animal Exposure Investigation. If client is unlikely to find animal but exposure can NOT be</li> </ul>



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Risk Level	Examples	Management
		considered low risk <b>for rabies</b> , then advise to continue search for animal but recommend RPEP at 10 days unless healthy animal is found prior to 10 days

### 5.5 RABIES PROPHYLAXIS

5.5.1 Refer to Manitoba Health “*Management of Animal Exposures to Prevent Human Rabies*”.

[http://www.gov.mb.ca/health/publichealth/cdc/protocol/rabies\\_protocol.pdf](http://www.gov.mb.ca/health/publichealth/cdc/protocol/rabies_protocol.pdf)

5.5.2 Once the decision has been made, rabies prophylaxis should be started as soon as possible.

- RIG (20 I.U. /kg for all age groups ) and the first dose of HDCV vaccine are given on day 0,
- For immunocompetent individuals, the remaining 3 doses of vaccine given on day 3, 7 and 14 for a total of 4 doses of HDCV
- Immunocompromised individuals (due to illness, medication, advanced age)<sup>1</sup> should receive an additional dose on day 28 for a total of 5 doses of HDCV.
- The CD Coordinator will order the RIG and dose # 1 of HDCV from the provincial vaccine warehouse once rabies post-exposure prophylaxis has been approved by the MOH. The community area public health clerk will order the remaining doses of rabies prophylaxis through Panorama to be provided in the community area public health office.

5.5.3 Once initiated, the vaccine schedule should be adhered to as rigorously as possible.

- RIG is also administered to generate immediate (but temporary) high antibody titers.
- Day 0, 3, 7 achieve high viral neutralizing antibody titres

<sup>1</sup> [http://www.gov.mb.ca/health/publichealth/cdc/protocol/rabies\\_protocol.pdf](http://www.gov.mb.ca/health/publichealth/cdc/protocol/rabies_protocol.pdf)



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- Day 14 dose is needed to boost antibody levels toward longevity for several months.
  - Most interruptions in the vaccine schedule do not require reinitiating of the entire series and there is no need to re-administer RIG.
  - The CD Coordinator should be consulted about disrupted schedules.
- 5.5.4 Administration of the RIG and 1st vaccine dose should be arranged with the client's usual care provider or the Misericordia Urgent Care Centre. The rest of the series can be administered by the PHN and if a dose is required on a weekend or holiday, arrangements can be made through the CD Coordinator to have this done by the weekend PHNs.
- 5.5.5 If the rabies vaccine schedule was initiated in a "developing world" setting, cold-chain integrity and hence vaccine efficacy, cannot be definitively confirmed, and will require assessment by MOH or CD coordinator.
- In this setting, if it can be confirmed that an efficacious vaccine was used in a reputable clinic with maintenance of the cold-chain, then it may be appropriate to continue the vaccine schedule rather than starting from the beginning (refer to CATMAT rabies statement for list of rabies vaccines that meet WHO safety and efficacy requirements).  
<http://www.collectionscanada.gc.ca/webarchives/20071116023105/>  
<http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02vol28/28sup/acs4.html>
  - If it cannot be confirmed that an efficacious vaccine was used, and if timely rabies antibody levels cannot be determined, it would be advisable to restart the vaccine schedule from Day 0.



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### 5.6 ADDITIONAL FOLLOW-UP

- 5.6.1 Ensure that the client's tetanus immunization is up to date (see Manitoba Health "Management of Animal Exposures to Prevent Human Rabies" protocol for guidance).
- 5.6.2 Refer to medical care if there are any signs of infection.

### 5.7 DOCUMENTATION

- 5.7.1 iPHIS is used to document all animal exposure investigations. Analysis of data collected on iPHIS will be used to guide future management, including the prevention of exposures.
- 5.7.2 The immunizations should be entered under immunization tab.

### 5.8 CLOSURE

- 5.8.1 When follow-up is complete the PHN will document final assessment in iPHIS.
- 5.8.2 PHN to refer the referral to the CD Coordinator.via iPHIS
- 5.8.3 The CD Coordinator will review to ensure appropriate follow-up has been completed.
- 5.8.4 CD Coordinator will close in iPHIS..

### 6.0 VALIDATION

- 6.1 Manitoba Health. Protocol for Management of Animal Exposures to Prevent Human Rabies.  
[http://www.gov.mb.ca/health/publichealth/cdc/protocol/rabies\\_protocol.pdf](http://www.gov.mb.ca/health/publichealth/cdc/protocol/rabies_protocol.pdf)

### 7.0 REQUIRED READING

- 7.1 Manitoba Health. *Protocol for Management of Animal Exposures to Prevent Human Rabies.*
- 7.2 CATMAT Statement on Travellers and Rabies Vaccine. CCDR 2002;28 (ACS-4):1-12.



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<http://www.collectionscanada.gc.ca/webarchives/20071116023105/http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/02vol28/28sup/acs4.html>

7.3 Recommendations Regarding the Management of Bat Exposures to Prevent Human Rabies. CCDR 2009;35 (ACS-7) 1-28.

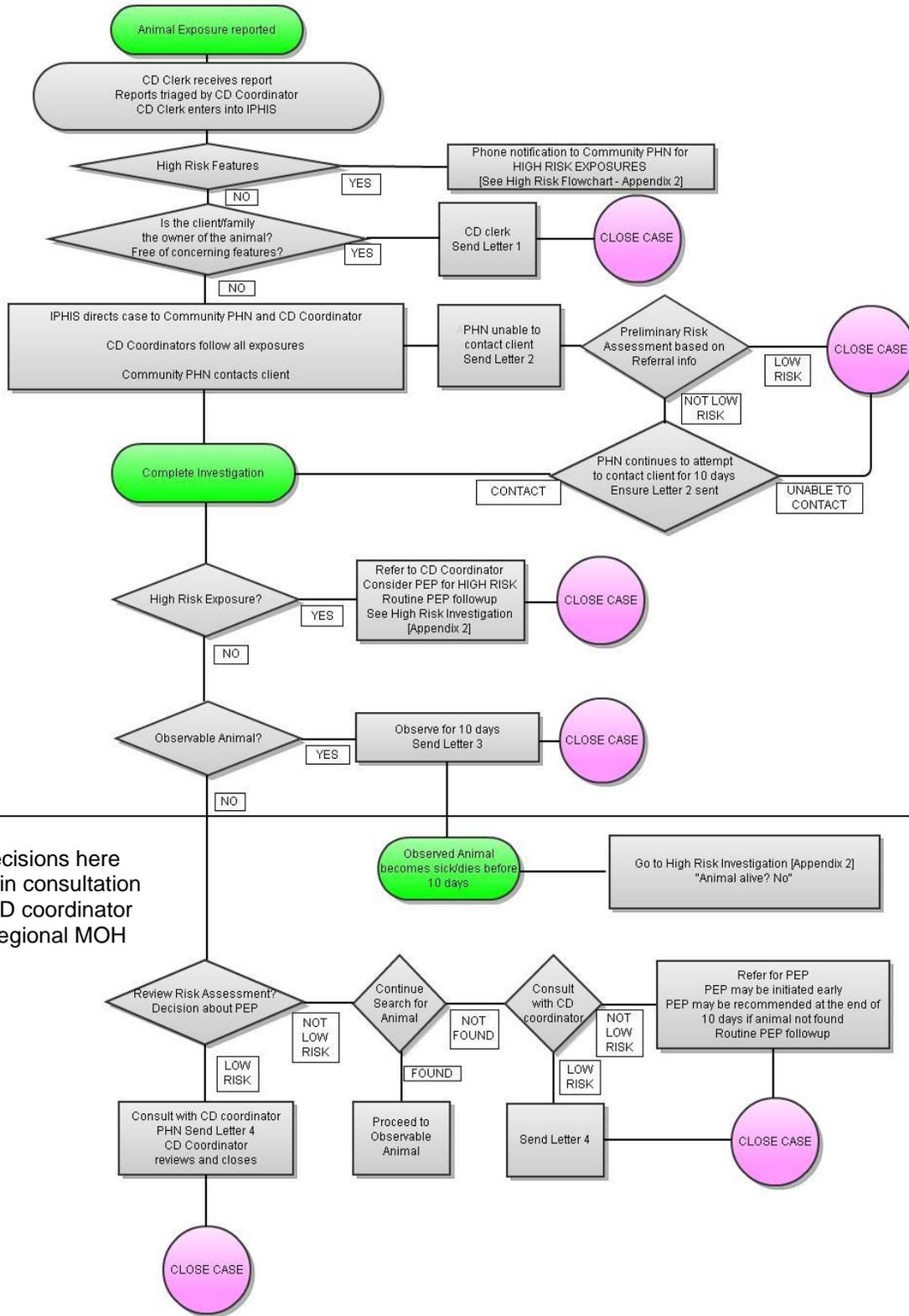
<http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/acs-dcc-7/index-eng.php>

### 11.0 APPENDICES

Appendix 1 – Animal Exposure Investigation

Appendix 2 – High Risk Exposure Investigation

# APPENDIX 1: Animal Exposure Investigation



## APPENDIX 2: High Risk Exposure Investigation

