Local & Provincial Raccoon Rabies Management Update

TO:	Chair and members of the Board of Health
MEETING DATE:	November 2, 2016
REPORT NO:	**BH.01.NOV0216.R19** Pages: 12
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Recommendations

It is recommended that the Board of Health:

1. Receive this report for information.

Key Points

- As of October 18, 2016, a total of 217 raccoons and skunks tested positive for the raccoon rabies strain in Ontario. The majority of these animals were from the Hamilton area; however, other affected areas include Haldimand-Norfolk, Niagara Region, Perth County, and Brant County. No human exposures have been reported to date.
- Ministry of Natural Resources and Fisheries have collected and tested 384 animals from December 2015 – September 2016 within Wellington-Dufferin-Guelph Public Health (WDGPH). No positive results have been reported to date.
- The Ministry of Natural Resources and Fisheries will continue to drop aerial wildlife vaccine baits until the end of October in the Wellington-Dufferin-Guelph area. These are not harmful to humans or pets.
- As of October 18, 2016, 526 suspect rabies investigations were completed, 22 animal specimens were sent for testing, and 31 people have received post-exposure rabies prophylaxis in the Wellington-Dufferin-Guelph area.

Discussion

The rabies virus has re-emerged in the Ontario wildlife population. New cases of the raccoon rabies strain were confirmed in the Hamilton area in December 2015. These are the first cases in Ontario since 2005. The fox strain of rabies has also been confirmed in Perth County; the last case in southern Ontario was in 2012 (Appendix A)**.** As of October 18, 2016, a total of 217 raccoons and skunks have tested positive for the raccoon rabies strain. The majority of these animals were from the Hamilton area; however, other affected areas include Haldimand-Norfolk, Niagara Region, Perth County, and Brant County (Appendix A).[1] In addition to the raccoon and fox rabies strains, bat strains can also be found in Ontario.[2] The Ministry of Natural Resources and Fisheries has collected and tested 384 animals from December 2015 to June 2016. No positive results have been reported (Appendix B).

It is important to note that every animal species is susceptible to multiple strains of rabies. For example, a raccoon may become infected with a bat strain, although it is most susceptible to the raccoon strain of rabies.[3]

Rabies is a viral disease that attacks the nervous system (brain and spinal cord) of warm-blooded animals. It can affect any mammal including humans, pets, farm animals, and wild animals. However, bats, foxes, skunks, and raccoons most commonly transmit the disease in Canada. It is almost always fatal once clinical signs appear. Rabies is spread by the saliva of infected animals, most commonly through a bite or scratch. It can also be spread when infected saliva touches an open wound or the moist tissues of the mouth, nose, or eyes of another mammal. Animals can spread rabies even before they show symptoms.[4]

Animals with rabies may show a variety of clinical signs and symptoms. The disease can appear in two forms: dumb rabies and furious rabies. In the former, domestic animals may become depressed and hide. Wild animals may appear unusually friendly, losing their fear of humans. Nocturnal animals, such as raccoons, may be active during the day. With furious rabies, animals can become very aggressive and excited. They may attack objects or other animals, or chew their own limbs. Periods of excitement tend to alternate with periods of depression. In both forms of rabies, death typically occurs within seven days due to breathing failure caused by paralysis of the respiratory system.[5,6]

In humans, the incubation period can range from less than one week to over a year. Once clinical signs of rabies appear the disease is almost always fatal.[7] There have been less than 10 documented cases of human survival from clinical rabies worldwide.[8] However, treatment soon after exposure to rabies can prevent the onset of symptoms and death. In most cases, post-exposure treatment consists of injection of rabies immune globulin (RIG) at the site of the bite, followed by a series of rabies vaccine. The RIG provides immediate passive protection until the exposed person mounts an immune response to the rabies vaccine.[9]

Rabies Management in Ontario

Rabies management in the province is a joint effort that involves the general public, veterinarians, local Public Health agencies, the Ministry of Health and Long-Term Care (MOHLTC), the Ministry of Agriculture, Food and Rural Affairs (OMAFRA), the Ministry of Natural Resources and Forestry (MNRF), the Ontario Association of Veterinary Technicians

(OAVT), and the Canadian Food Inspection Agency (CFIA).[4] Other organizations and municipalities may be involved at a more local level.

General Public: It's important for people to be aware of the rabies threat to protect themselves and their families accordingly and to report any animal bites/scratches to Public Health. Members of the community can help reduce the spread of rabies through vaccination of pets and informing authorities when an animal is suspected of having the disease.

Public Health: As outlined in the Ontario Public Health Standards, Public Health is responsible for the management and investigation of suspected human rabies exposures. In addition, they are responsible for contingency planning and monitoring rabies positive animals within the health unit and in bordering health units, as reported by the CFIA and MNRF. Improving public knowledge of rabies and its prevention is also an important part of the work of Public Health.

Veterinarians: Veterinarians can educate their clients on the value of vaccinating their pets against rabies and the vaccination requirements for pets travelling to other countries. They also manage domestic animal rabies exposures by reporting any animal bites or scratches to Public Health.

MOHLTC: The MOHLTC establishes the standards for local boards of health for the management of suspected rabies exposures. They developed the Rabies Prevention and Control Protocol (2013) and the Guidance Document for the Management of Suspected Rabies Exposures (2013). These documents assist public health staff with management of suspected rabies cases.

OMAFRA: OMAFRA is the lead agency when there is a suspected domestic pet or livestock rabies exposure without human exposure. They provide rabies response training for veterinarians, including risk assessment and sample submission procedures.

MNRF: The MNRF is responsible for the surveillance, management, and control of rabies in wildlife which includes the annual distribution of wildlife rabies vaccine baits. They will continue to drop aerial wildlife vaccine baits until the end of October 2016 in the Wellington-Dufferin-Guelph area (Appendix C and D). These baits are not harmful to humans or pets. They also respond to public inquiries regarding sick, dead, or injured wildlife.

OAVT: The Rabies Response Program is managed and coordinated by OAVT staff in joint partnership with the MOHLTC. This program provides the service of specimen collection and shipping to the CFIA laboratories for rabies testing. Specimens are from cases involving potential human exposure to rabies caused by animals including wildlife, livestock, companion animals, and zoo animals.[10]

CFIA: The CFIA is responsible for diagnosing rabies in samples submitted to CFIA laboratories, approving rabies vaccines, implementing border controls, reporting geographic and species statistics, developing national policy, and continuing research.[6]

Rabies Management in Wellington-Dufferin-Guelph

Management and Investigation of Suspected Rabies Exposures

Public Health Inspectors (PHIs) investigate and manage suspect human rabies exposures that are reported to WDGPH 24 hours a day, seven days a week. During the course of the investigation, PHIs may coordinate testing of an animal for rabies with OAVT or manage the confinement of a domestic animal. Domestic animals are confined for an observational period of

10 days, as the rationale is that the animal would die during this time period if it was afflicted with the rabies virus. This would then trigger human post-exposure prophylaxis to begin. Where post-exposure prophylaxis is recommended, PHIs will coordinate vaccine distribution with the clients' physician. As of October 18, 2016, 526 rabies investigations were completed, 22 specimens were sent to the lab for rabies testing, and 31 people have received post-exposure prophylaxis. No positive results have been reported to date.

Rabies Contingency Plan

In April 2016, WDGPH completed a rabies contingency plan. The purpose is to provide a coordinated action plan to manage the threat posed by raccoon rabies. It is focused on early detection and monitoring of the raccoon strain of rabies, and the coordination of the various agencies involved in its control. While WDGPH plays a strong role in the coordination and execution of this plan, it requires the cooperation of numerous partners to be effective. The plan sets out action to:

- Reduce the potential for entry of more raccoon rabies into Ontario Health Unit jurisdictions (Prevention and Detection)
- Slow its spread beyond any initial outbreak (Control)
- Inform the public and the various agencies to enable them to take appropriate action to prevent rabies from entering the human population (Education and Communication)

Rabies Voucher Program

Beginning in March 2016, WDGPH partnered with two veterinary clinics in the City of Guelph to offer rabies vaccination vouchers to low-income individuals. During the investigation of a biting incident, if an animal owner cannot afford a rabies vaccination for their pet, the PHI will provide the client with a voucher so they may receive the vaccination for a reduced fee. This initiative aims to reduce barriers to vaccinating pets against rabies.

One Health Clinics

Public Health partnered with Community Veterinary Outreach to offer homeless and vulnerably housed clients (and their pets) human and animal health services at no cost. Clients are referred by local agency caseworkers and are assigned an appointment time on the evening of the clinic, which is held at the Welcome In Drop-In Centre in Guelph.

Pet services include microchipping, core vaccines (including rabies), a wellness exam, deworming medication, and flea and tick treatment. Human services include a Public Health Nurse consultation, offering of flu and tetanus vaccinations, provision of dental kits (includes toothbrush, toothpaste, and floss), making condoms available, and distributing $10 grocery store gift cards.

Human clients had to meet certain criteria to be eligible to obtain an appointment:

- Clients must have a pet dog or cat and be homeless, at high risk of homelessness, or vulnerably housed
- Clients must have a case, social, outreach, or health worker
- Clients cannot have had an existing veterinary-client patient relationship within the past year

These clinics are currently scheduled twice a year in February and October in Guelph.

Low-Cost Rabies Clinics

WDGPH supports low-cost rabies clinics that are offered in the area. These clinics offer rabies vaccinations at a reduced cost and are open to the general public without proof of income. WDGPH helps advertise these clinics through the website and social media. The following clinics were successful at vaccinating a large number of pets against rabies in a short period of time:

- April 2016 – Low-Cost Clinic in Ospringe (130 animals vaccinated)
- April 2016 – Low-Cost Clinic at Stonegate Animal Hospital in Guelph (70 animals vaccinated)
- October 2016 – Low-Cost Clinic on Ospringe (64 animals vaccinated)

Communications

- Physician Advisory (December 2015): Informing of re-emergence of rabies virus in Ontario.
- WDGPH Website (Ongoing): Informing of current case numbers in Ontario and what the public should do if they are bitten or scratched by an animal.
- Social Media – Twitter (Ongoing): Reminding clients to vaccinate their animals, informing of upcoming low-cost rabies clinics, and will advise of imminent risk when an animal tests positive in WDGPH.
- WDGPH Blog (April 2016): Informing the public of the rabies outbreak, ways to reduce their own risk, and who to contact if they need to report a bite or if they see a wild animal acting strangely.

Conclusion

Rabies is a fatal disease which is now in the Ontario wildlife population. Government agencies, animal health professionals, and the general public play a critical role in controlling and managing the spread of this disease so it does not gain access to the human population.

Ontario Public Health Standard

Rabies Prevention and Control

Goal: To prevent the occurrence of rabies in humans.

Societal Outcomes

- There is reduced incidence of suspected rabies exposures in humans.
- Human rabies is prevented in all reported suspected rabies exposures.

Board of Health Outcomes

- The board of health achieves timely and effective detection and identification of positive reports of rabies in animal species, and other emerging risks and trends associated with rabies in humans.
- The board of health is aware of and uses epidemiology to influence the development of healthy public policy and its programs and services to prevent the occurrence of rabies in humans.
- The public is aware of rabies and its prevention.
- The public, community partners, and healthcare providers report all suspected rabies exposures in the health unit to the board of health.
- The board of health manages reports of suspected rabies exposures.
- The public, community partners, and healthcare providers are prepared for rabies threats.

WDGPH Strategic Direction(s)

Check all that apply:

☒ Health Equity
We will provide programs and services that integrate health equity principles to reduce or eliminate health differences between population groups.

☐ Organizational Capacity
We will improve our capacity to effectively deliver public health programs and services.

☐ Service Centred Approach
We are committed to providing excellent service to anyone interacting with Public Health.

☒ Building Healthy Communities
We will work with communities to support the health and well-being of everyone.

Health Equity

The vaccination of pets against rabies is an important preventative measure against human rabies exposure; however, the cost of the rabies vaccine may be a barrier to some individuals which prevents them from vaccinating their dog or cat. WDGPH is taking steps to help reduce this barrier including:

- Partnering with Community Veterinary Outreach to offer homeless and vulnerably housed clients and their pets, human and animal health services free of charge.
- Partnering with local veterinary clinics to offer rabies vaccination vouchers to low-income individuals which can be used to obtain a discounted rabies vaccination for a dog or cat.
- Advertising low-cost rabies clinics (that offer rabies vaccinations at a reduced cost) to the general public through the WDGPH website and social media.

References

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5. Public Health Agency of Canada. Fact sheet on rabies. [Internet] 2008 [cited 2016 July 18]. Available from: http://www.phac-aspc.gc.ca/im/rabies-faq-eng.php
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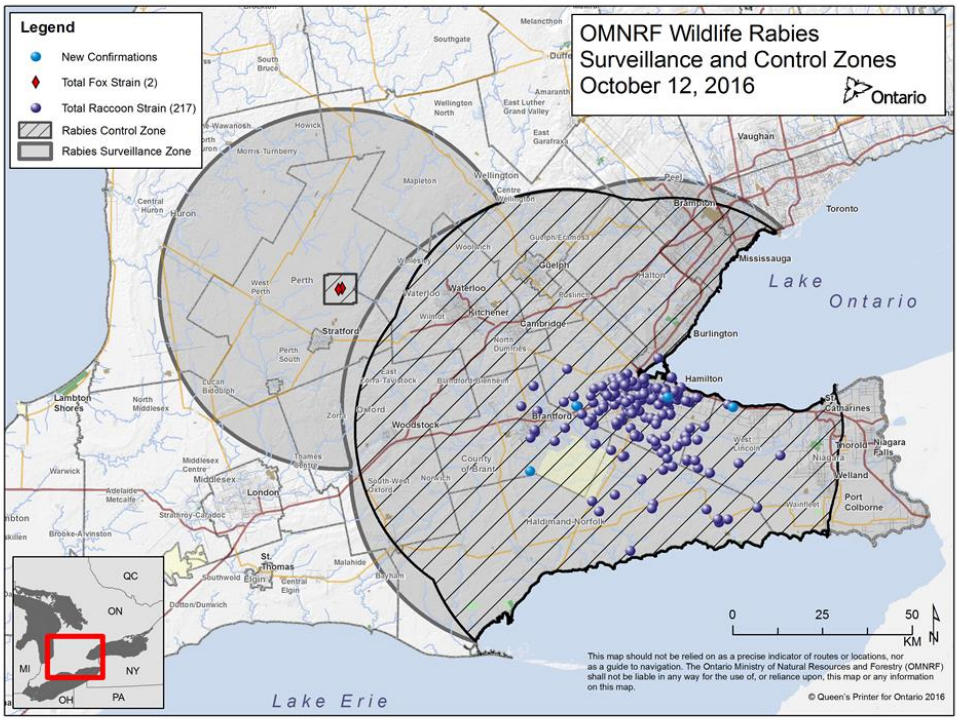
11. Canadian Food Inspection Agency. Rabies in Canada. [Internet] 2016 [cited 2016 Sept 2016]. Available from: http://www.inspection.gc.ca/animals/terrestrial-animals/diseases/reportable/rabies/rabies-in-canada/eng/1356156989919/1356157139999

Appendices

Appendix A:

MNRF Map of Rabies Surveillance & Control Zones (October 12, 2016)



Source: Ministry of Natural Resources & Fisheries. Rabies in wildlife. [Internet] 2016 [cited 2016 Oct 18]. Available from: https://www.ontario.ca/page/rabies-wildlife on October 18, 2016.

Appendix B:

Surveillance

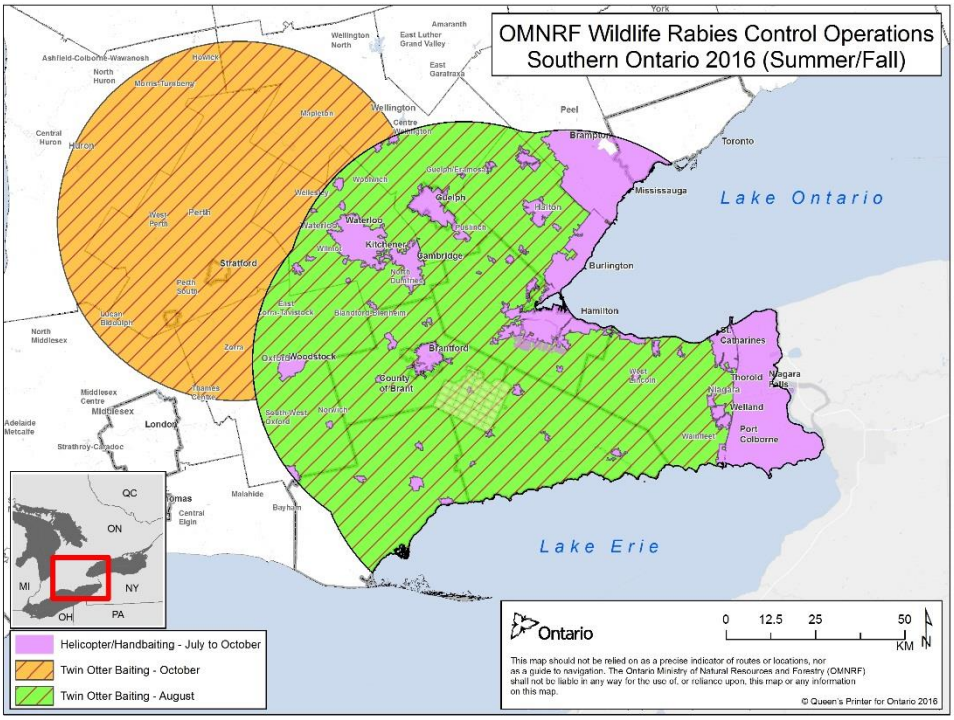
Summary of MNRF Wildlife Tested Specimens in WDGPH (December 2015 - June 2016)

	Raccoons	Skunks	Bats	Total
December 2015	12	0	0	22
January 2016	55	0	0	55
February 2016	50	4	0	54
March 2016	67	25	0	92
April 2016	46	13	0	59
May 2016	22	5	1	28
June 2016	24	0	0	24
July 2016	9	0	0	9
August 2016	10	3	0	13
September 2016	7	0	0	7
Unknown Day/Month	19	2	0	21
Total				384

Dunlop J. Ministry of Natural Resources & Fisheries. WDGPH animal surveillance and rabies testing [Data Share]. 2016 Oct 20.

Appendix C:

MNRF Wildlife Bait Control Zones (Summer/Fall 2016)



Source: Ministry of Natural Resources & Fisheries. Rabies in wildlife. [Internet] 2016 [cited 2016 Oct 18]. Available from: https://www.ontario.ca/page/rabies-wildlife on October 18, 2016.

Appendix D:

Image of MNRF Wildlife Rabies Baits

Source: Ministry of Natural Resources & Fisheries. Rabies in wildlife. [Internet] 2016 [cited 2016 Oct 18]. Available from: https://www.ontario.ca/page/rabies-wildlife on October 18, 2016.