



Karen L. Overall, MA, VMD, PhD, DACVB
Department of Companion Animals
Atlantic Veterinary College, UPEI
550 University Ave.
Charlottetown, PE, C1A 4P3
Canada
koverall@upe.ca

Dear dog lover:

28 March 2020

Along with a number of collaborators, I am attempting to study the effects – if any - of changes in their humans' behaviors/schedules on the behaviours of dogs in the household during the COVID-19 pandemic. This is a stressful time for everyone, and I have spent a large part of my career trying to understand dogs' responses to stressful circumstances, and how to best treat and prevent their anxieties. Naturally, this is a period of concern.

These are unprecedented times where people are being required to spend more time at home. We ought to be able to monitor dogs for changes in behaviours that may occur with during this time of social isolation, quarantine and social distancing. Any such changes should be measurable using a standardized set of questionnaires that have been validated for clinical patients and are now used world wide in many studies of patterns of anxious behaviors in dogs.

The questionnaire is 21 pages long. Depending on the version of Word and operating system you are using, pages 7 or 8 through 20 or 21 are tick sheets, and two of these (the repetitive behavior assessment and the old dog assessment) will *not* apply to every dog. You can read the introductions and see if these two sets of forms apply to *your dog*. Everyone will need to complete at least (1) the separation anxiety screen, (2) the noise screen, and (3) the aggression/avoidance screen (pages 1-12 or 13, depending on formatting).

Everyone needs to complete the forms twice: once with pre-isolation behavioural information and once after we have a return to normal. Ideally, we would like for you to complete this form every week or 2, but we know that everyone will not have time to do this. If we monitor dogs every week or 2, we will be able to assess rate of change. Any more frequently and we just do not see the change. The first time you complete the form it will take you about 30 minutes if your dog is relatively problem free. If your dog has behavioral problems, it will take you longer to complete the form. After that, it will take 10-20 minutes since you can just identify yourself and your dog (to assure we can match sequential forms) and

skip to the tick sheets unless there are changes in any of the earlier management factors (e.g., number and length of walks, play, training sessions, pattern of feeding, et cetera).

If you have multiple dogs, please feel free to complete a form for each dog.

These forms are created as Word documents so that you can save them and then make only the relevant changes. The best way to save them is to add your or your dog's name and the date they were completed to the existing label for the file (EX: COVID dog study_Overall_AnnieOverall_22March2020).

There is also an online version this form, for people who would rather complete the information entirely online and have it automatically sent to us: <https://form.jotform.com/200826740303042> .

We would like the first time you evaluate your dog to be either early in the changes that occurred in response to COVID-19 *or, if you start sending us the form after the COVID-19 changes started*, tell us how the dog was *before* COVID-19 changes in human movement and behaviour occurred. We have a place on the forms to help you explain the initial evaluation. We also need for you to evaluate your dog **at least once 2 weeks after our lives return to "normal"**. So, *the minimum number of times participants must complete the form is twice*. There is no maximum number of times for completion, but most changes will not show in less than a 1-2 week interval.

If you decide that you no longer wish to participate, just tell us this is the case and we will expect no follow up. If you decide you wish to withdraw your data, if you notify us by 31 January 2021, we will erase it. Please note that you can contact the UPEI Research Ethics Board at (902) 620-5104, or by email at reb@upei.ca if you have any concerns about the ethical conduct of this study.

If, when we review the forms, it is clear that your dog would benefit from seeing your veterinarian or a specialist, we will let you know this, if you provide an email address. All information about you and your dog(s) will be kept strictly confidential. All forms will be anonymized and, except for email addresses of those wishing to receive the study results (see question 5), only anonymized data will be kept for publication/presentation at research meetings.

We will publish the results of the study in a peer-reviewed scientific journal. If you have any questions about the study or your dog, I'd be pleased to answer them.

Please return your questionnaires to me at koverall@upei.ca, *if you do not wish to use the online option*. If you have questions, please email me at koverall@upei.ca and I shall answer you via email.

Many thanks. Please stay well, be safe, and take care of each other.

Sincerely,



Karen L. Overall (Website: www.KarenOverall.com; Twitter: [@DrKarenOverall](https://twitter.com/DrKarenOverall))

Basic history questionnaire – dogs

The questionnaire that follows focuses on many aspects of your dog’s behavior and related health issues. This history questionnaire has been improved/amended over the years using clinical data because medicine is an evolving, evidence-based field. The most recent published version of it can be found in Overall, KL. *Manual of Clinical Behavioral Medicine for Dogs and Cats*, Elsevier, 2013.

Please complete the pages below as accurately as possible. If you have any questions about this form please email Dr. Karen Overall at koverall@upei.ca. Thank you for your dedication to your dog and for repeatedly completing this form. The first time you complete the form it will take you about 30-40 minutes to complete. Follow up forms will take 10-20 minutes to complete.

By ticking this box you are giving implied consent to participate in the study. Such consent may be withdrawn at any time and data can be erased through 31 January 2021. . Please note that you can contact the UPEI Research Ethics Board at (902) 620-5104, or by email at reb@upei.ca if you have any concerns about the ethical conduct of this study.

Please note if this is the first time you are completing this form or if this is a follow-up form.

FIRST TIME FILLING OUT THE FORM – completed at the beginning of the owner’s COVID-19 related schedule change

FIRST TIME FILLING OUT THE FORM – completed **after** the owner(s) have begun the COVID-19 related schedule change. The form reflects the dog’s behavior prior to these schedule changes.

FOLLOW-UP FORM – Date form, state your name and you dog’s name, and then proceed to the Separation Anxiety section to start filling the form (Skipping questions 3-44). If you wish to add additional comments use a separate sheet. ***If the dog has experienced changes in exercise, routine, sleeping, training or diet, these changes can be made on questions 22-31, and then you can proceed to the tick sheets starting with Separation Anxiety.***

Date form Completed = _____

Please provide your dog’s weight and their body condition score. You can determine your dog’s body condition score from the reference chart in the link provided: <https://wsava.org/wp-content/uploads/2020/01/Body-Condition-Score-Dog.pdf>

Dog’s weight: _____kg or _____lb

Body condition score (BCS): _____

1. Pet’s name	
2. Owner’s name	
3. Country of owner’s residence:	

4. If you wish to read a copy of the anonymized study results we need your email address and consent.	<input type="checkbox"/> Yes, I would like to see the anonymized results and give consent to use my email address.
5. Owner's e-mail address	Email:
6. Breed of dog	
7. Sex of dog	
8. Has this dog been neutered/spayed?	<input type="checkbox"/> Yes <input type="checkbox"/> No
9. How old, in months, was the dog when neutered/spayed?	_____ months
10. What was the reason for neutering/spaying?	
11. Has this dog been bred?	<input type="checkbox"/> Yes <input type="checkbox"/> No
12. If you have not yet bred this dog, do you plan on breeding him or her?	<input type="checkbox"/> Yes <input type="checkbox"/> No
13. Describe your dog's coat color	
14. Dog's date of birth	Day: Month: Year:
15. Dog's age at completion of this questionnaire, in months	_____ months
16. How old was your dog when you first acquired him or her, in months?	_____ months
17. Has this pet had other owners?	<input type="checkbox"/> Yes <input type="checkbox"/> No If so, how many? <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5+ <input type="checkbox"/> unknown Why was the pet given up/relinquished?
18. How long have you had this dog, in months?	_____ months
19. Where did you get this dog?	a. Stray/found b. Breeder - serious show/performance breeder c. Breeder - backyard breeder/neighbor d. SPCA / humane shelter e. Breed rescue service f. Newspaper adoption ad (not breeder) g. Pet store h. Friend i. Other (Please explain)
20. Does this dog have any physical or medical	<input type="checkbox"/> Yes <input type="checkbox"/> No

problems that your veterinarian has noted?	If so, what specifically?
21. Is your dog taking any medication for any of the medical problems discussed above?	<input type="checkbox"/> Yes <input type="checkbox"/> No If so, please list medication
21a. Is your dog taking any other medication or supplements (including natural products, creams, vitamins, preventatives)	<input type="checkbox"/> Yes <input type="checkbox"/> No If so, please list
22. How is your dog exercised / maintained?	Is this dog (please check all that apply): a. allowed to run free, unsupervised b. allowed to run unsupervised in a fenced yard, kennel or run c. leash walked d. allowed to run free outside, unleashed, but supervised e. indoors only f. outdoors only
23. How many walks does your dog get daily, and how long are these walks?	# walks _____ average length in minutes _____
24. How many play sessions does your dog get daily?	_____ sessions per day
25. How many training sessions does your dog get daily or weekly (tell us which)?	_____ sessions per day or _____ per week (circle time period)
26. How is your dog kept when you leave him or her alone?	a. free in the house b. free outdoors c. indoor kennel/run d. outdoor kennel/run e. crate indoors f. crate outdoors or in garage g. behind a gate or door in house h. other (please specify)
27. What percentage of the 24 h day does your pet spend inside?	_____ % inside
28. What percentage of the day does your pet spend outside?	_____ % outside
29. What kind of a living situation do you have?	a. Apartment a. townhouse / condominium b. house with small yard c. house with large yard

	d. farm
30. Has your household changed since acquiring this pet?	<input type="checkbox"/> Yes <input type="checkbox"/> No If so, how? a. Death of human in family b. Death of pet in family c. Divorce d. Marriage e. Baby born f. Child moved (school, job, etc) g. Pet added h. Family moved i. Family schedule changed (lost or gained jobs) j. Other
31. Where does your pet mainly sleep (Please check all that apply; we know pets move at night):	a. In or on your bed b. On his/her own bed in your bedroom c. In a crate in your bedroom d. On a bed in another room e. In a crate in another room f. On the floor next to your bed g. In another room, voluntarily, anywhere he or she wants h. In another room, because he/ she is locked from your bedroom i. anywhere he/she wants
32. What is your dog's obedience school/training history?	a. No school - trained yourself b. Puppy kindergarten c. Group lessons – basic d. Group lessons – advanced e. Private trainer at house f. Private trainer - sent to trainer g. Agility h. Flyball i. Specialty training (hunting, herding, et cetera); please specify
32. At what age did your dog start lessons/training?	_____ months
34. How did the dog do in obedience school/training? i.e., enjoyed going to class, learned easily, hid under chair, was "stubborn"/slow to learn, etc.)	
35. Does the dog have any obedience titles?	<input type="checkbox"/> Yes <input type="checkbox"/> No
36. How well does this dog do with the following	a. Sit

commands / requests?	Perfect	OK, needs work	Badly	Doesn't Know	
	b. Stay	Perfect	OK, needs work	Badly	Doesn't Know
	c. Down / lie down	Perfect	OK, needs work	Badly	Doesn't Know
	d. Wait	Perfect	OK, needs work	Badly	Doesn't Know
	e. Heel	Perfect	OK, needs work	Badly	Doesn't Know
	f. Fetch	Perfect	OK, needs work	Badly	Doesn't Know
	g. Leave it / drop it	Perfect	OK, needs work	Badly	Doesn't Know
	h. Take it	Perfect	OK, needs work	Badly	Doesn't Know
	i. Other (please specify)	Perfect	OK, needs work	Badly	Doesn't Know
		Perfect	OK, needs work	Badly	Doesn't Know

37. Please list the people, ***including yourself***, currently living in the household now. If you do not wish to identify people please number them and provide accompanying gender and age information. We need the age and gender information because dog behaviours have been shown to vary by these owner factors.

NAME	SEX	AGE
<i>Ex: Maria or Individual 1</i>	<i>F</i>	<i>45</i>

38. Please list all the **animals** (include all pets, even non-dogs) in the household.

Name	Order obtained	Breed	Sex*	Age obtained (months)	Age now (months)	Any physical illness? (Y/N)	Any behavioral issues? (Y/N)

*M = male intact/entire, F = female intact/entire, MC = male castrated/neutered, FS = female spayed/neutered

39. If any of the animals above has been identified as having a medical problem (Y), what is the problem?

40. If any of the animals above has been identified as having a behavioral problem (Y), what is the problem?

41. Please describe, in detail, how you prepare to leave the house when the dog will be left alone. Do you ignore the dog, do you seek him or her and say goodbye, do you make a fuss, crate, confine to room/other area, outside, etc.?

42. What does your dog do as you prepare to leave?

43. How often is your dog left daily and for how long? Please complete the table below.

	Weekdays - usually	Weekends - usually	Weekdays – during COVID-19	Weekends – during COVID-19
# times a day left				
Shortest absence				
Longest absence				

Separation anxiety (SA) and noise phobia/reactivity (NP) screen

The first set of these questions deals with an “**actual absence**” - the owner actually leaves the house and the dog is either alone or totally without the owner. The second set deals with “**virtual absence**” - the owner is home, but not accessible because the door is closed or the dog is barricaded in another room. The questions are the same for each, but please answer both.

Check **NO**, if the dog does not react in the listed circumstance.

Check **UNKNOWN**, if you don’t know.

Check **YES**, if the dog reacts. Please evaluate the extent of the reaction from the list below.

IF YES:

- 100% of the time = **always**
- < 100% of the time, but > 60% = **more often than not**
- 40 – 60% of the time = **about equally**
- 0% of the time but < 40% = **less often than not**

Behaviors during an ACTUAL absence

BEHAVIOR	YES	DON'T KNOW	NO
1. Destructive behavior when separated from owner.	() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%		
2. Urination when separated from owner.	() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%		
3. Defecation when separated from owner.	() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%		
4. Vocalization when separated from owner (barking, whining, howling, etc)	() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%		
5. Salivation/drooling when separated from owner.	() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%		
6. Panting when separated from owner.	() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%		
7. If the answer is YES for any of the above responses, what is the timing of the onset of behaviors (if known)?			
a. () within 5 minutes			
b. () more than 5 minutes, but less than 30 minutes			

- c. more than 30 minutes, but less than one hour
- d. more than 1 hour, but less than 3 hours
- e. only after several hours

Behaviors during a VIRTUAL absence

BEHAVIOR	YES	DON'T KNOW	NO
8. Destructive behavior when separated from owner.	<input type="checkbox"/> 100% of the time <input type="checkbox"/> < 100% but > 60% <input type="checkbox"/> 40-60% of the time <input type="checkbox"/> > 0% but < 40%		
9. Urination when separated from owner.	<input type="checkbox"/> 100% of the time <input type="checkbox"/> < 100% but > 60% <input type="checkbox"/> 40-60% of the time <input type="checkbox"/> > 0% but < 40%		
10. Defecation when separated from owner.	<input type="checkbox"/> 100% of the time <input type="checkbox"/> < 100% but > 60% <input type="checkbox"/> 40-60% of the time <input type="checkbox"/> > 0% but < 40%		
11. Vocalization when separated from owner.	<input type="checkbox"/> 100% of the time <input type="checkbox"/> < 100% but > 60% <input type="checkbox"/> 40-60% of the time <input type="checkbox"/> > 0% but < 40%		
12. Salivation when separated from owner.	<input type="checkbox"/> 100% of the time <input type="checkbox"/> < 100% but > 60% <input type="checkbox"/> 40-60% of the time <input type="checkbox"/> > 0% but < 40%		
13. Panting when separated from owner.	<input type="checkbox"/> 100% of the time <input type="checkbox"/> < 100% but > 60% <input type="checkbox"/> 40-60% of the time <input type="checkbox"/> > 0% but < 40%		
14. If the answer is YES for any of the above responses, what is the timing of the onset of behaviors (if known)? <ul style="list-style-type: none"> a. <input type="checkbox"/> within 5 minutes b. <input type="checkbox"/> more than 5 minutes, but less than 30 minutes c. <input type="checkbox"/> more than 30 minutes, but less than one hour d. <input type="checkbox"/> more than 1 hour, but less than 3 hours e. <input type="checkbox"/> only after several hours 			

C. Reactions to noise

BEHAVIOR	YES	DON'T KNOW	NO
<p>1. Reaction during thunderstorms.</p> <p>Type of response - please check all that apply:</p> <p>() salivate () hide () defecate () tremble () urinate () destroy () escape () freeze () pant () will not eat food/treats () pace () pupil dilation () vocalize (bark, whine, growl, howl)</p>	<p>() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%</p>		
<p>2. Reaction to fireworks.</p> <p>Type of response - please check all that apply:</p> <p>() salivate () hide () defecate () tremble () urinate () destroy () escape () freeze () pant () will not eat food/treats () pace () pupil dilation () vocalize (bark, whine, growl, howl)</p>	<p>() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%</p>		
<p>3. Reaction to gunshots.</p> <p>Type of response - please check all that apply:</p> <p>() salivate () hide () defecate () tremble () urinate () destroy () escape () freeze () pant () will not eat food/treats () pace () pupil dilation () vocalize (bark, whine, growl, howl)</p>	<p>() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%</p>		
<p>4. Reaction to other noises.</p> <p>Type(s) of noise(s) (vacuum cleaners, leaf blowers, weed whackers, dump trucks, sirens, alarm systems, etc.):</p> <p>_____</p> <p>Type of response - please check all that apply:</p> <p>() salivate () hide () defecate () tremble () urinate () destroy () escape () freeze () pant () will not eat food/treats</p>	<p>() 100% of the time () < 100% but > 60% () 40-60% of the time () > 0% but < 40%</p>		

<input type="checkbox"/> pace <input type="checkbox"/> pupil dilation <input type="checkbox"/> vocalize (bark, whine, growl, howl)																							
<p>5. How frequently in terms of <i>weeks</i> do noise events such as thunder, fireworks, or gunshots occur in the dog's environment?</p> <table border="0"> <tr> <td>a. never 0%</td> <td>b. occasionally > 0% but < 50% Once a month or so</td> <td>c. regularly 50% but < 100% a few times a month</td> <td>d. frequently 100% at least multiple times a week</td> </tr> </table>				a. never 0%	b. occasionally > 0% but < 50% Once a month or so	c. regularly 50% but < 100% a few times a month	d. frequently 100% at least multiple times a week																
a. never 0%	b. occasionally > 0% but < 50% Once a month or so	c. regularly 50% but < 100% a few times a month	d. frequently 100% at least multiple times a week																				
<p>6. Has this dog ever been treated for noise sensitivities or phobias? If so, with what, please?</p>																							
<p>7. Does your dog react to other aspects of storms:</p> <table border="0"> <tr> <td>a. Wind</td> <td>Yes</td> <td>No</td> <td>Uncertain</td> </tr> <tr> <td>b. darkness</td> <td>Yes</td> <td>No</td> <td>Uncertain</td> </tr> <tr> <td>c. ozone</td> <td>Yes</td> <td>No</td> <td>Uncertain</td> </tr> <tr> <td>d. barometric pressure</td> <td>Yes</td> <td>No</td> <td>Uncertain</td> </tr> <tr> <td>e. rain</td> <td>Yes</td> <td>No</td> <td>Uncertain</td> </tr> </table>				a. Wind	Yes	No	Uncertain	b. darkness	Yes	No	Uncertain	c. ozone	Yes	No	Uncertain	d. barometric pressure	Yes	No	Uncertain	e. rain	Yes	No	Uncertain
a. Wind	Yes	No	Uncertain																				
b. darkness	Yes	No	Uncertain																				
c. ozone	Yes	No	Uncertain																				
d. barometric pressure	Yes	No	Uncertain																				
e. rain	Yes	No	Uncertain																				

Reactivity and aggression (AAR) screen

KEY: NR=no reaction; S= snarl (noise); L=lift lip (can see corner teeth); B=bark (aggressive, **not** an alerting bark); G=growl (**not** a play growl); SP=snap (no connection with skin); BT=bite (connects with skin, regardless of damage); WD=withdraw or avoid; NA=not applicable (animal has never been in that situation)

This screen can be used in three ways:

- (1) to note the presence or absence, at any time, of any of the behaviors,
- (2) by the clients to keep as a log about the baseline behavior, noting how many times the behavior occurs, given the number of times it is attempted, per unit time (i.e., per week) and
- (3) to keep a log about frequencies of the occurrence behaviors, given the number of times the circumstance has been encountered, at different intervals during treatment so that these numbers can be compared with those in (2).

Please feel free to note if the reaction is consistent in style, or only directed towards one person, or only present in one restricted circumstance. If using this screen only for the first use, you can also note if the dog has been worsening in intensity or frequency in any category using an *.

	NR	S	L	B	G	SP	BT	WD	NA
1. take dog's food dish with food									
2. take dog's empty food dish									
3. take dog's water dish									
4. take food (human) that falls on floor									
5. take rawhide									
6. take real bone									
7. take biscuit									
8. take toy									
9. human approaches dog while eating									
10. dog approaches dog while eating									
11. human approaches dog while playing with toys									
12. dog approaches dog while playing with toys									
13. human approaches/disturbs dog while sleeping									
14. dog approaches/disturbs dog while sleeping									
15. step over dog									
16. push dog off bed/couch									
17. reach toward dog									
18. reach over head									
19. put on leash									
20. push on shoulders									

21.	push on rump																		
22.	towel feet when wet																		
23.	bathe dog																		
24.	groom dog's head																		
25.	groom dog's body																		
26.	stare at																		
27.	take muzzle in hands and shake																		
28.	push dog over onto back																		
29.	stranger knocks on door																		
30.	stranger enters room																		
31.	dog in car at toll booth																		
32.	dog in car at gas station																		
33.	dog on leash approached by dog on street																		
34.	dog on leash approached by person on street																		
35.	dog in yard - person passes																		
36.	dog in yard - dog passes																		
37.	dog in vet's office																		
38.	dog in boarding kennel																		
39.	dog in groomers																		
40.	dog yelled at																		
41.	dog corrected with leash																		
42.	dog physically punished - hit																		
43.	someone raised voice to owner in presence of dog																		
44.	someone hugs-touches owner in presence of dog																		
45.	squirrels, cats, small animals approach																		
46.	bicycles, skateboards																		
47.	crying infant																		
48.	playing with 2-year-old children																		
49.	playing with 5-7-year-old children																		
50.	playing with 8-11-year-old children																		
51.	playing with 12-16-year-old children																		

If you are now done with this survey, and do not need to complete the section on stereotypic behaviors or old dogs, please go to the last page. Thank you!

Stereotypic and ritualistic behavior (RSS) history – for selected dogs, ONLY

This section of the history form is to be completed only if your dog is showing any repetitive, ritualistic behaviors that you find troublesome or about which you are concerned. If your dog is not doing this, you do not have to complete this form.

Which category/categories below matches your dog's behavior?	
<i>Check as many categories that apply to the dog's behavior. Then check the best description that relates to the selected behavior.</i>	
a. <input type="checkbox"/> Grooming	<input type="checkbox"/> Chewing self <input type="checkbox"/> Licking self <input type="checkbox"/> Barbering (trimming) hair on self <input type="checkbox"/> Biting self <input type="checkbox"/> Plucking hair from self <input type="checkbox"/> Sucking self
b. <input type="checkbox"/> Hallucinatory	<input type="checkbox"/> Staring and attending to things that are not there <input type="checkbox"/> Tracking things that are not there <input type="checkbox"/> Pouncing on or attacking things that are not there
c. <input type="checkbox"/> Consumptive	<input type="checkbox"/> Consuming rocks <input type="checkbox"/> Consuming dirt or soil <input type="checkbox"/> Consuming other objects <input type="checkbox"/> Eating, sucking or chewing wool or fabric <input type="checkbox"/> Licking or gulping air
d. <input type="checkbox"/> Locomotory	<input type="checkbox"/> Circling / spinning <input type="checkbox"/> Tail-chasing <input type="checkbox"/> Freezing
e. <input type="checkbox"/> Vocalization	<input type="checkbox"/> Rhythmic barking <input type="checkbox"/> Howling <input type="checkbox"/> Growling

Patterns of behavior questions: Please indicate the appropriate answer (**YES/NO/UNCERTAIN**) for each of the following questions. Please feel free to add separately any information that you think might be helpful.

QUESTION	YES	NO	UNCERTAIN
1. Was there a change in the household or an event associated with the development of the behavior?	<i>If yes, please describe in detail.</i>		
2. Is there any time of day when the behavior seems more or less intense?	<i>If so, please describe in detail what is usually going on at that time of day.</i>		<i>No one is home often enough to know.</i>
3. Is there a person or another pet in the presence of whom the behavior seems more intense?	<i>If yes, who is this and what is their association to the pet?</i>		
4. Does the dog respond to its name or seem aware of its surroundings while in the midst of the behavior?			
5. Is the dog aware that you are calling him/her?	<i>If yes, how can you tell?</i>		
6. Can you convince the dog to stop the behavior by:			
a. Calling the dog?			
b. Using physical restraint (holding, leashing)?			
c. Kenneling/crating?			
7. List the kinds of things (i.e., noises, treats, toys, et cetera) if any, that will interrupt the behavior once it has started.			

QUESTION	YES	NO	UNCERTAIN
8. Is there a location in which the dog prefers to perform the behavior?	<i>If yes, where?</i>		
9. For ingestion, list what types of objects are consumed. Be as specific as possible – what type of rug or sweater fabric?			
10. Does any event or behavior routinely occur immediately before the behavior begins?	<i>If so, what?</i>		
11. Does any event or behavior routinely occur immediately after the behavior ceases?	<i>If so, what?</i>		
12. Has the dog's general behavior changed in any way since the onset of the atypical behavior (i.e., the dog is more or less aloof, aggressive, withdrawn, playful, etc.)?	<i>If so, please specify?</i>		
13. Has the dog's diet recently been changed?	<i>If so, what - specifically - was the change?</i>		
15. How old do you think your pet was when its ritualistic behavior began?	<i>Age in months</i> _____		
16. Did anyone else in the dog's family exhibit these or similar behaviors?	<i>If yes, who?</i> <i>Mother Father Sister</i> <i>Brother Grandmother</i> <i>Grandfather Other</i>		

Finally, familial patterns of this condition have been documented so if you can provide a pedigree for this dog, it would be extremely helpful and informative. If you are able to provide a pedigree please label the dogs in it with the following code:

KA – known affected

KU – known unaffected

TA – tentatively or possibly affected

TU – tentatively or possibly unaffected

AO – affected with another behavioral problem

Any blank dogs will be assumed to have no known behavioral information.

For this condition, affected relatives do not have to have the same form of the condition to be considered affected. In other words, some dogs may suck themselves whereas others follow fences or chase their tails. If you know what any other affected dogs do, please let us know.

- I am attaching a pedigree for this dog.
- There is a pedigree available for this dog but it is not attached.
- No pedigree is available for this dog.

Thank you for your help in providing as much information as possible.

If you are now done with this survey, and do not need to complete the section on old dogs, please go to the last page. Thank you!

Questionnaire¹ to evaluate behaviors old dogs (OD) – for selected dogs, ONLY

This section of the history form is to be completed only if your dog is older (> 5 or 6 years for larger dogs and > 10 years for smaller ones) so that we can assess changes associated with aging. If your dog is not elderly or you have no complaints that could be associated with age, you do not have to complete this form. If you are uncertain, please complete the form.

Behavior screen for age associated changes:

1. Locomotory / ambulatory assessment (tick **only 1**)
 - a. no alterations or debilities noted
 - b. modest slowness associated with aging from youth to adult
 - c. moderate slowness associated with aging
 - d. moderate slowness associated with aging plus alteration or debility in gait (e.g., limps, occasionally trips)
 - e. moderate slowness associated with aging plus some loss of function (e.g., cannot climb stairs)
 - f. severe slowness associated with extreme loss of function, particularly on slick surfaces (may need to be carried or need a support harness)
 - g. severe slowness, extreme loss of function, and decreased willingness or interest in locomoting (spends most of time in bed)
 - h. paralysed or refuses to move

2. Appetite assessment (may tick **more** than 1)
 - a. no alterations in appetite
 - b. change in ability to physically handle food
 - c. change in ability to retain food (vomits or regurgitates)
 - d. change in ability to find food when offered, dropped or in dish
 - e. change in interest in food (may be olfactory, having to do with the ability to smell)
 - f. change in rate of eating
 - g. change in completion of eating
 - h. change in timing of eating
 - i. change in preferred textures

3. Assessment of elimination function (tick **only 1** in **each** category)
 - a. changes in frequencies and “accidents”
 1. no change in frequency and **no** “accidents”
 2. increased frequency, **no** “accidents”
 3. decreased frequency, **no** “accidents”
 4. increased frequency **with** “accidents”
 5. decreased frequency **with** “accidents”
 6. no change in frequency, **with** “accidents”

¹ This questionnaire was adapted from a series of veterinary medical questionnaires to assess changes in physical and behavioral states and includes modified questions from: Rofina, J.E., Van Ederen, A.M., Toussaint, M.J.M., Secreve, M., Van, D.S., Van, D.M., I, Van Eerdenburg, F.J.C.M., Gruys, E., 2006. Cognitive disturbances in old dogs suffering from the canine counterpart of Alzheimer's disease. *Brain Res.* 1069, 216-226. Salvin, H.E., McGreevy, P.D., Sachdev, P.S., Valenzuela, M.J., 2011b. The canine cognitive dysfunction rating scale (CCDR): A data-driven and ecologically relevant assessment tool. *Vet. J.* 188, 331-336.

b. bladder control

1. leaks urine when asleep, only
2. leaks urine when awake, only
3. leaks urine when awake or asleep
4. full-stream, uncontrolled urination when asleep, only
5. full-stream, uncontrolled urination when awake, only
6. full-stream, uncontrolled urination when awake or asleep
7. no leakage or uncontrolled urination, but urinates in inappropriate or undesirable location
8. no change in urination control or behavior

c. bowel control – please circle the appropriate answer for the description you choose

1. defecates when asleep
formed stool diarrhea mixed
2. defecates without apparent awareness
formed stool diarrhea mixed
3. defecates when awake and aware of action, but in inappropriate or undesirable locations
formed stool diarrhea mixed
4. no changes in bowel control

4. Visual acuity - how well does the client think the dog sees? (tick **only 1**)

- a. no change in visual acuity detected by behavior - appears to see as well as ever
- b. some change in acuity dependent on ambient light conditions
- c. some change in acuity **not** dependent on ambient light conditions
- d. extreme change in acuity dependent on ambient light conditions
- e. extreme change in acuity **not** dependent on ambient light conditions
- f. blind

5. Auditory acuity - how well does the client think the dog hears (tick **only 1**)

- a. no apparent change in auditory acuity
- b. some decrement in hearing – not responding to sounds to which the dog used to respond
- c. extreme decrement in hearing – have to make sure the dog is paying attention or repeat signals or go get the dog when called
- d. deaf – no response to sounds of any kind

6. Play interactions - if the dog plays with **toys** (other pets are addressed later), which situation best describes that play? (tick **only 1**)

- a. no change in play with toys
- b. slightly decreased interest in toys, only
- c. slightly decreased ability to play with toys, only
- d. slightly decreased interest and ability to play with toys
- e. extreme decreased interest in toys, only
- f. extreme decreased ability to play with toys, only
- g. extreme decreased interest and ability to play with toys
- h. this dog has never played with toys

7. Interactions with humans - which situation best describes that interaction? (tick **only 1**)
- no change in interaction with people
 - recognizes people but slightly decreased frequency of interaction
 - recognizes people but greatly decreased frequency of interaction
 - withdrawal but recognizes people
 - does not recognize people
 - this dog has never really interacted with people
8. Interactions with other pets - which situation best describes that interaction?(tick **only 1**)
- no change in interaction with other pets
 - recognizes other pets but slightly decreased frequency of interaction
 - recognizes other pets but greatly decreased frequency of interaction
 - withdrawal but recognizes other pets
 - does not recognize other pets
 - no other pets or animal companions in house or social environment
 - this dog has never really interacted with other dogs or cats
9. Changes in sleep / wake cycle (tick **only 1**)
- no changes in sleep patterns
 - sleeps more in day, only
 - some change - awakens at night and sleeps more in day
 - much change - profoundly erratic nighttime and daytime sleep patterns with lots of nighttime activity or restlessness
 - sleeps virtually all day, awake occasionally at night
 - sleeps almost around the clock
8. How often does your dog pace up and down, walk in circles and/or wander with no direction or purpose?
- Never
 - Once a month
 - Once a week
 - Once a day
 - More than once a day
9. How often does your dog stare blankly at the walls or floor?
- Never
 - Once a month
 - Once a week
 - Once a day
 - More than once a day
10. How often does your dog get stuck behind objects and is unable to get around?
- Never
 - Once a month
 - Once a week
 - Once a day
 - More than once a day

11. How often does your dog fail to recognize familiar people or pets?
 - a. Never
 - b. Once a month
 - c. Once a week
 - d. Once a day
 - e. More than once a day

12. How often does your dog walk into walls or doors?
 - a. Never
 - b. Once a month
 - c. Once a week
 - d. Once a day
 - e. More than once a day

13. How often does your dog walk away from or avoid being petted or other loving attention that they have been known to enjoy?
 - a. Never
 - b. Once a month
 - c. Once a week
 - d. Once a day
 - e. More than once a day

16. Has your dog changed in the way he behaves with humans, dogs or cats? Please tell us about any changes. Things in which we are especially interested are a change (increase or decrease – please tell us which) in avoidance, aggression, fear, withdrawal, approach or any other component of social interaction.

17. Is there anything else you think we should know? If you think you have observed something interesting – even if you don't understand it – please tell us. THANK YOU!

In closing:

Once again, thank you so much for your dedication to your dog and for your interest in the study.

We wanted to remind you that your data will be anonymized for analysis and for all presentations and publications. If you decide that you no longer wish to participate, just tell us this is the case and we will expect no follow up. If you decide you wish to withdraw your data, if you notify us by 31 January 2021, we will erase it. Please note that you can contact the UPEI Research Ethics Board at (902) 620-5104, or by email at reb@upei.ca if you have any concerns about the ethical conduct of this study.

If you would like a summary of the study results, we are happy to provide you with this. Either email me or ensure that you provided your email and ticked the box on question 4 and when we have collated the data and done the first pass analysis, we shall provide you with the information. If you wish copies of the paper that is published, we can also send you this once it is *in press*.

Again, thank you.

A handwritten signature in black ink that reads "Karen L. Overall". The signature is written in a cursive, flowing style.

Karen L. Overall, MA, VMD, PhD, DACVB
koverall@upei.ca