

Survey of Pet Owners Encountering Ticks (PETs) in Lyme Disease Endemic Areas

Supporting Statement B for a New Generic Information Collection Request

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Table of Contents

- 1. Respondent Universe and Sampling Methods.....3
- 2. Procedures for the Collection of Information.....4
- 3. Methods to Maximize Response Rates and Deal with Nonresponse.....5
- 4. Tests of Procedures or Methods to be Undertaken.....5
- 5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data.....5

B. Collections of Information Employing Statistical Methods

The Centers for Disease Control and Prevention (CDC) Division of Vector-Borne Diseases (DVBD) and the Emerging Infections Program (EIP) in Maryland are requesting approval for a generic information collection (gen-IC) to conduct formative research to generate hypotheses regarding pet owner or pet behaviors that may increase the risk of human-tick encounters in Lyme endemic areas of Maryland.

Collection of information from this survey is not designed or intended to develop incidence or prevalence estimates. This survey is not intended to yield results that are statistically projectable, nationally representative, or that produce precise estimates of population parameters. Information gathered under this gen-IC will not be used for the purpose of substantially informing influential policy decisions.

1. Respondent Universe and Sampling Methods

We aim to recruit up to 500 individuals for this study using convenience sampling methods. In the absence of statistically robust calculations for nonprobability samples, we used established cross sectional sample size calculation methods and assumed a random sample, a given power of 80%, a two-sided alpha level of .05, and a hypothetical outcome measure of 50.6% of pet owners reporting tick encounters (per Jones et al. [5]). The resulting sample size of 500 will allow us to adequately gain experience with our survey instrument and evaluate logistics for a future, prospective study within our study budget while providing some robustness. The study population will consist of persons ≥ 18 years of age residing in Maryland with indoor-outdoor dogs and/or cats.

In Maryland, recruitment efforts will target communities with high incidence of Lyme disease. These counties are Anne Arundel (19.0 reported LD cases per 100,000 population in 2015), Harford (69.5 reported LD cases per 100,000 population in 2015), and Howard (62.2 reported LD cases per 100,000 population in 2015). Anne Arundel County has a 2010 population of greater than 400,000 with an average household size of 3.11 in its 200,000 households. Harford County has a population of approximately 245,000 with an average household size of 2.68 in over 90,000 households. Howard County has a population of about 287,000, with an average household size of 2.72 in over 104,000 households.

We will recruit participants from the previously indicated high incidence Lyme disease counties in Maryland. Participants will be recruited through veterinary clinics, county rabies clinics, on social media sites of Animal Control agencies, and via direct market mailings using a commercial marketing database.

We will purchase mailing addresses from Salesgenie (a commercial marketing database) for persons who meet the following criteria:

1. Live in one of the three counties referenced above
2. Listed as a pet owner
3. Listed an internet user.

We will randomly select 8,000 addresses from the purchased list. Assuming a response rate of 5%, we will mail recruitment postcards to the 8,000 randomly selected addresses to reach a target of 400 participants.

Veterinary clinics will be recruited by sending emails directly to veterinarians (Attachment 3) using email addresses from the Maryland State Board of Veterinary Medical Examiners, by direct contact of corporate offices for selected veterinary chains, and through newsletters including the Maryland One Health Bulletin. We will distribute 100 postcards (Attachment 2) to every participating veterinary clinic and each county rabies clinic to hand out to pet owners. We anticipate recruiting 100 participants via this mechanism (for a total of 500 participants).

We will also advertise this survey on social media sites for Animal Control agencies in the participating counties. The advertisement (Attachment 7) will be a modification of our postcard with additional wording to request only residents within our catchment area. Interested parties will be directed to our study email address so that we can screen for residency and mail them a postcard.

2. Procedures for the Collection of Information

The postcards that the Maryland sites will mail or distribute through clinics to prospective participants will:

- explain the purpose of the study, scope of participant involvement, and the token of appreciation for participation (\$10 gift card to a local store)
- define eligibility criteria
- give the participant the link to the survey with a unique access code
- tell the participant the survey expiration date
- ask the participant to take the web-based survey if interested in participating
- give site contact information in case of questions or if the participant would like to withdraw

If participants are willing to take the survey, they will type in the link given in the invitation letter into their web browser and enter the unique access code included in the letter. This access code is required when the participant logs in online to take the survey. The beginning of the survey will confirm that the respondent is eligible to take the survey.

The following variables will be collected using the Research Electronic Data Capture (REDCap) survey (Attachment 1):

- Age of participating household member
- Age, sex, size, and coat length of each indoor-outdoor dog and cat (up to five of each) in household
- Approximate time spent outside for each dog or cat
- History of tick exposure, tickborne disease, and Lyme vaccine use for each dog or cat
- Frequency of certain human-pet interaction behaviors
- History of tick exposure among household members and pets
- Use of pet-specific tick prevention products for each dog or cat
- Use of protective practices at the household level (*e.g.*, cleaning, repellent use, yard-based tick control)
- Email address if the participant chooses to be contacted for future studies related to pet ownership and tickborne diseases (email addresses will not be stored long-term with the associated study ID)

In addition, the addresses for participants (if the participant chooses to receive the \$10 gift card) will be collected via email from the participant to MD EIP study coordinators at MDH.Pets@maryland.gov.

Participants may voluntarily withdraw from this study for any reason at any time. If participants wish to withdraw after taking the survey, they can call the MD EIP site and reference the survey access code and recruitment ID from their survey invitation postcard. A letter will be sent confirming the participant's withdrawal (Attachment 6).

3. Methods to Maximize Response Rates and Deal with Nonresponse

These surveys will expire 11 weeks from the time participants receive the survey invitation postcards. No additional mailings will be made to ask participants to respond to the survey. After completion of the survey, participants will be mailed a thank you letter (Attachment 4) with a \$10 gift card as a token of appreciation.

4. Tests of Procedures or Methods to be Under-taken

No tests of procedures or methods will be undertaken.

5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

All persons listed below may be involved in design, collection and analysis of proposed data:

Maryland Department of Health and Mental Hygiene Emerging Infections Program (MD EIP):
Katherine Feldman, State Public Health Veterinarian, Katherine.feldman@maryland.gov
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List of attachments

1. Survey
2. Introductory postcard
3. Veterinarian recruitment letter
4. Thank you letter
5. IRB Determination
6. Withdrawal letter
7. Social Media Advertisement