**A Scoping Review to Examine Studies Investigating Zoonotic and Vectorborne Diseases in *Canis familaris* in North America Since the Beginning of the 21st Century.**

**Appendix IV:** Explanation and elaboration (“guidance”) document for reviewers for data-charting (Level 3screening).

**Level 3 Data-Charting Form** Relevant data will be extracted from full text publications using the following questions. Keywords pertaining to the question are listed where relevant for clarity:

1. Is the full text publication a journal article or conference proceeding (**>**500 words)?
2. Is the full text article or conference proceeding **(>500 words**) describing a primary research study?
3. Is the full text article available in English, French or Spanish?
4. Has the primary research been published or presented (*e.g.* conference proceedings (**>** 500 words)) within the period 2000 – present?
5. Does the full text research propose to investigate one or more canine zoonoses of interest?
6. Has the full text research been conducted in North America?
7. Is the study at the dog-level or pathogen-level where the zoonotic pathogen was isolated from a dog?
8. Is the dog-level study approach described by authors?
9. Does the full publication list the type(s) of domestic dogs as the target population?
10. Is the general focus of the pathogen-level study described?
11. Was any type of integrated collaborative approach listed as part of the study (*e.g.* in the objectives or methods)?

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| **C: Full Text Data Extraction (Level 3 – Data-Charting Form)** | | |
| **Question** | **Options** | **Action and Keywords** |
| 1. Is the full text publication a journal article or conference proceeding (>500 words)?  (**Variable = primres)** | * Yes, journal article * Yes, conference proceeding (>500 words) | Please select one. (i.e. radio question in DistillerSR)  **Keywords:** Primary research is defined as **original scientific reports** of research findings.  e.g. research article, clinical report, case study, dissertation, books (some), interviews; manuscripts; papers; |
| 2. Is the full text article or conference proceeding (>500 words) describing a primary research study?  (**Variable = pubtype**) | * Yes, journal article * Yes, conference proceeding (>500 words) | Please select one. (i.e. radio question in DistillerSR) |
| 3. Is the full text article available in English, French or Spanish?  (**Variable = language**) | * Yes, in English * Yes, in French * Yes, in Spanish | Please select one. (i.e. radio question in DistillerSR) |
| 4. Has the primary research been published or presented (*e.g.* conference proceedings (> 500 words)) within the period 2000 – present? (**Variable = year**) | * Yes, 2000 * Yes, 2001 * Yes, 2002 * Yes, 2003 * Yes, 2004 * Yes, 2005 * Yes, 2006 * Yes, 2007 * Yes, 2008 * Yes, 2009 * Yes, 2010 * Yes, 2011 * Yes, 2012 * Yes, 2013 * Yes, 2014 * Yes, 2015 * Yes, 2016 * Yes, 2017 * Yes, 2018 | Please select one. (i.e. radio question in DistillerSR)  **Keywords:** note the year the article was published |
| 5. Does the full text research propose to investigate one or more canine zoonoses of interest?  (**Variable=disease**) | * Yes, Anaplasma * Yes, Ancylostoma * Yes, Babesia * Yes, Bacillus (**Anthrax**) * Yes, Baylisascaris procyonis * Yes, Borrelia burgdorferi (**Lyme disease**) * Yes, Brucella * Yes, Campylobacter * Yes, Capnocytophaga * Yes, Corynebacterium * Yes, Coxiella burnetii (**Q fever**) * Yes, Cryptosporidium parvum * Yes, Dipylidium caninum (**Flea tapeworm**) * Yes, Echinococcus granulosus (**Hydatid worm**) * Yes, Echinococcus multilocularis (**Tapeworm**) * Yes, Ehrlichia (**canine rickettsiosis; canine hemorrhagic fever; canine typhus; tracker dog disease; tropical canine pancytopenia**) * Yes, Entamoeba histolytica * Yes, Escherichia coli (**E.coli; Colibacillosis**) * Yes, Giardia intestinalis (**Giardia duodenalis**; **Giardia lamblia; Giardosis; Lambliasis; Lambliosis**) * Yes, Helicobacter * Yes, Influenza (**Canine influenza; dog flu**) * Yes, Leishmania chagasi (**Visceral leishmaniasis**) * Yes, Leishmania infantum (**Visceral leishmaniasis**) * Yes, Leptospira (**Lepto**) * Yes, Methicillin resistance staphylococcus aureus (**MRSA**) * Yes, Microsporum canis (**Ringworm**) * Yes, Onchocerca lupi * Yes, Pasteurella * Yes, Proteus * Yes, Pseudomonas * Yes, Rabies * Yes, Rickettsia rickettsii (**Rocky Mountain Spotted Fever**) * Yes, Salmonella * Yes, Sarcoptes scabiei (**Mange; Sarcoptic mange; scabies**) * Yes, Spirocerca (**Canine Spirocercosis**) * Yes, Sporothrix schenckii * Yes, Toxocara canis (**Roundworm**) * Yes, Toxoplasma gondii * Yes, Trichinella spiralis (**Trichinosis**) * Yes, Trypanosoma cruzi (**Chagas disease**) * Yes,Uncinaria stenocephala (**Hookworm**) * Yes, Vibrio cholerae (**Cholera**) * Yes, Yersinia enterocolitica | Please select **all that apply**. (i.e. checkbox option in DistillerSR)  **Keywords:** Anaplasma OR Ancylostoma OR Babesia OR Bacillus “Baylisascaris procyonis” OR “Borrelia burgdorferi” OR Brucella OR Campylobacter OR Capnocytophaga OR “Coxiella burnetii” OR Corynebacterium OR “Cryptosporidium parvum” OR “Dipylidium caninum” OR “Echinococcus granulosus” OR “Echinococcus multilocularis” OR Ehrlichia OR “Entamoeba histolytica” OR “Escherichia coli” OR “Giardia intestinalis” OR Helicobacter OR Influenza OR “Leishmania chagasi” OR “Leishmania infantum” OR Leptospira OR “Methicillin resistance staphylococcus aureus” OR “Microsporum canis” OR “Onchocerca lupi” OR Pasteurella OR Proteus OR Pseudomonas OR Rabies OR “Rickettsia rickettsii” OR Salmonella OR “Sarcoptes scabiei” OR Spirocerca OR “Sporothrix schenckii” OR “Toxocara canis” OR “Toxoplasma gondii” OR “Trichinella spiralis” OR “Trypanosoma cruzi” OR *“*Uncinaria stenocephala*”* OR “Vibrio cholerae” OR “Yersinia enterocolitica” |
| 6. Has the full text research been conducted in North America? (**Variable = country**) | * Yes, Anguilla * Yes, Antigua and Barbuda * Yes, Aruba * Yes, The Bahamas * Yes, Barbados * Yes, Belize * Yes, Bermuda * Yes, Bonaire * Yes, British Virgin Islands * Yes, Canada * Yes, Cayman Islands * Yes, Clipperton Island * Yes, Costa Rica * Yes, Cuba * Yes, Curacao * Yes, Dominica * Yes, Dominican Republic * Yes, El Salvador * Yes, Federal Dependencies of Venezuela * Yes, Greenland * Yes, Grenada * Yes, Guadeloupe * Yes, Guatemala * Yes, Haiti * Yes, Honduras * Yes, Jamaica * Yes, Martinique * Yes, Mexico * Yes, Montserrat * Yes, Navassa Island * Yes, Nicaragua * Yes, Nueva Esparta * Yes, Panama * Yes, Puerto Rico * Yes, Saba * Yes, San Andres and Providencia * Yes, Saint Barthelemy * Yes, Saint Kitts and Nevis * Yes, Saint Lucia * Yes, Saint Martin * Yes, Saint Pierre and Miquelon * Yes, Saint Vincent and the Grenadines * Yes, Sint Eustatius * Yes, Sint Maarten * Yes, Trinidad and Tobago * Yes, Turks and Caicos Islands * Yes, United States * Yes, United States Virgin Islands. | Please select **all that apply**.  **Keywords:** Anguilla; Antigua and Barbuda; Aruba; The Bahamas; Barbados; Belize; Bermuda; Bonaire; British Virgin Islands; Canada; Cayman Islands; Clipperton Island; Costa Rica; Cuba; Curacao; Dominica; Dominican Republic; El Salvador; Federal Dependencies of Venezuela; Greenland; Grenada; Guadeloupe; Guatemala; Haiti; Honduras; Jamaica; Martinique; Mexico; Montserrat; Navassa Island; Nicaragua; Nueva Esparta; Panama; Puerto Rico; Saba; San Andres and Providencia; Saint Barthelemy; Saint Kitts and Nevis; Saint Lucia; Saint Martin; Saint Pierre and Miquelon; Saint Vincent and the Grenadines; Sint Eustatius; Sint Maarten; Trinidad and Tobago; Turks and Caicos Islands; United States; and the United States Virgin Islands.  If some studies list the province (Canada) and state (USA) but do not for whatever reason list the country, the following are links to the 13 Canadian provinces:  <https://www.canada.ca/en/immigration-refugees-citizenship/services/new-immigrants/prepare-life-canada/provinces-territories.html>  and, 50 USA states: <https://state.1keydata.com/state-abbreviations.php> |
| 7. Is the study at the dog-level or pathogen-level where the zoonotic pathogen was isolated  from a dog?  (**Variable = level**) | * Yes, at the dog-level (linked to questions 8 & 9) * Yes, at the pathogen-level (linked to question 10) | Please select one.  **Keywords:**  **Pathogen-level can include studies of canine zoonoses specific to the agents of disease:** bacteria; viruses; parasites; fungi |
| 8. Is the **dog-level** study approach described by authors? | |  | | --- | | * Yes, outbreak investigation * Yes, descriptive study: Case report * Yes, descriptive study: Case series\* * Yes, ONLY descriptive statistics presented: for example anything DESCRIBING data e.g. estimating proportions, prevalence, incidence WITHOUT comparisons * Yes, analytical experiment (AE1): challenge trial of intervention to prevent * Yes, analytical experiment (AE2): challenge trial of intervention to treat * Yes, analytical experiment (AE3): natural disease trial of intervention to prevent * Yes, analytical experiment (AE4): natural disease trial of intervention to treat * Yes, observational study (OBS1): intervention to prevent * Yes, observational study (OBS2): intervention to treat * Yes, observational study (OBS3): evaluation of risk factors for disease * Yes, observational study (OBS4): evaluation of mechanisms of disease/virulence * Yes, observational study (OBS5): diagnostic test development/evaluation * Yes, but study approach ill-defined or unclear * No, it is not described/unclear | |  | | Please select **all that apply**.  \*select this ONLY if author(s) state that a case series was conducted.  **Keywords:**  **Descriptive studies** are used to describe phenomena. Descriptive studies do not have a comparison (control) group  -Case-reports (study describes rare condition or an unusual manifestation of a more common [canine zoonotic] disease(s) in dogs),  -Case-series reports (study describes occurrence of or usual clinical presentation of canine zoonotic condition/ disease) and,  -Descriptive surveys (study estimates frequency and distribution of selected outcomes (*i.e.* canine zoonoses) in defined canine population)).  **Experimental study designs** - the allocation of ‘study units’ to intervention groups is under the control of the investigator  **Observational study designs** - the allocation of ‘study units’ to intervention groups is not under the control of the investigator; relate naturally occurring exposures to natural disease occurrence |
| 9.Does the full publication list the type(s) of domestic dogs as the target population? (**Variable = targpop**) | * Yes, owned domestic dogs * Yes, free-roaming domestic dogs * Yes, stray domestic dogs * Yes, dogs bred for and/or used in experiments * Yes, domestic dog population ill-defined or unclear | Please select **all that apply**. |
| 10.Is the general focus of the pathogen-level study described? | * Yes, molecular biology **(MB)** * Yes, phylogeny **(PH)** * Yes, whole genome sequencing **(GS)** * Yes, identification of virulence factors **(VF)** * Yes, development or validation of laboratory methods and diagnostics **(LM)** * Yes, pathophysiology and immunology of pathogen-host interaction **(IP)** * Yes, but categorical focus is ill-defined or unclear * No, it is not described/unclear | Please select **all that apply**.  **Keywords:**  **Pathogen-level can include studies of canine zoonoses specific to the following agents of disease:** bacteria; viruses; parasites; fungi  -**Molecular biology** (for instance  phage typing or serotyping of bacteria, describing surface proteins or antigens of viruses,  characterization of nucleic acids (DNA; RNA));  -**Phylogeny** (molecular epidemiology);  -**Whole genome sequencing**;  -**Identification of virulence factors**;  -**Development or validation of laboratory methods and diagnostics**;  -**Pathophysiology and immunology of pathogen-host interaction** (e.g.,  evaluating interleukin).  **Molecular biology:** investigates the molecular basis of biological activity within cells; looks at interactions between nucleic acids DNA and RNA and proteins as well as the regulation of these interactions  **Molecular epidemiology (specific to canine zoonoses in domestic dogs):** the contribution of potential genetic and environmental risk factors, identified at the molecular level, to the etiology, distribution, and prevention of disease within domestic dogs and across domestic dog populations |
| 11.Was any type of integrated collaborative approach listed as part of the study (*e.g.* in the objectives or methods)? | * Yes, Collaborative Approach * Yes, Community-Based Approach * Yes, EcoHealth * Yes, One Health * Yes, Participatory Epidemiology * Yes, Systems Approach * Yes, but approach ill-defined or unclear * No | Please select **all that apply**.  **Keywords:** One Health, EcoHealth, Systems approach; Participatory Epidemiology, Community-Based Research; Collaborative approach |