

Supplementary Materials: Dataset S1. USDA and NIH online free access information about TBD. **Dataset S2.** CDC online information on TBD surveillance. **Dataset S3.** Tick-borne pathogens identified in ticks from Central America.

Dataset S1. USDA and NIH online free access information about TBD.

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National Institutes of Health (NIH). News in Health. May 2014. Tick Talk. Block tick bites and Lyme disease. <https://newsinhealth.nih.gov/2014/05/tick-talk>

Dataset S2. CDC online information on TBD surveillance.

https://www.cdc.gov/ticks/data-summary/dashboard-data-files/Selected_Tick-borne_Diseases_United-States.csv

Year,Count,Disease

2016,36429,Lyme disease

2016,4151,Anaplasmosis

2016,4269,Spotted Fever Rickettsiosis

2016,1910,Babesiosis

2016,1377,Ehrlichia chaffeensis ehrlichiosis

2016,230,Tularemia

2016,200,Undetermined ehrlichiosis/anaplasmosis

2016,22,Ehrlichia ewingii ehrlichiosis

2016,22,Powassan virus disease

2017,42743,Lyme disease

2017,5762,Anaplasmosis

2017,6248,Spotted Fever Rickettsiosis

2017,2368,Babesiosis

2017,1642,Ehrlichia chaffeensis ehrlichiosis

2017,239,Tularemia

2017,269,Undetermined ehrlichiosis/anaplasmosis

2017,45,Ehrlichia ewingii ehrlichiosis

2017,34,Powassan virus disease

2018,33666,Lyme disease

2018,4008,Anaplasmosis

2018,5544,Spotted Fever Rickettsiosis

2018,2160,Babesiosis

2018,1799,Ehrlichia chaffeensis ehrlichiosis

2018,229,Tularemia

2018,283,Undetermined ehrlichiosis/anaplasmosis

2018,33,Ehrlichia ewingii ehrlichiosis

2018,21,Powassan virus disease

2019,34945,Lyme disease

2019,5655,Anaplasmosis

2019,5207,Spotted Fever Rickettsiosis

2019,2420,Babesiosis

2019,2093,Ehrlichia chaffeensis ehrlichiosis

2019,274,Tularemia

2019,185,Undetermined ehrlichiosis/anaplasmosis

2019,43,Ehrlichia ewingii ehrlichiosis

2019,43,Powassan virus disease

https://www.cdc.gov/ticks/data-summary/dashboard-data-files/total_reported_cases_1619.csv

Year,2016,2017,2018,2019

Reported Tick-borne Disease,Count,Count,Count,Count

Lyme disease,"36,429","42,743","33,666","34,945"

Anaplasmosis,"4,151","5,762","4,008","5,655"

Spotted Fever Rickettsiosis,"4,269","6,248","5,544","5,207"

Babesiosis,"1,910","2,368","2,160","2,420"

Ehrlichia chaffeensis ehrlichiosis,"1,377","1,642","1,799","2,093"

Tularemia,230,239,229,274

Undetermined ehrlichiosis/anaplasmosis,200,269,283,185

Ehrlichia ewingii ehrlichiosis,22,45,33,43
Powassan virus disease,22,34,21,43
Total,"48,610","59,350","47,743","50,865"

Dataset S3. Tick-borne pathogens identified in ticks from Central America.

Country	<i>Rickettsia</i> spp.	Arthropod species
Belize	<i>Rickettsia amblyommatis</i>	<i>Amblyomma pacae</i> <i>Amblyomma cajennense</i> s.l. <i>Amblyomma ci. maculatum</i>
	<i>Rickettsia parkeri</i>	<i>Amblyomma maculatum</i>
	<i>Rickettsia</i> st. Atlantic Rainforest	<i>Amblyomma ovale</i>
	<i>Rickettsia</i> sp.	<i>Ixodes affinis</i> <i>Rhipicephalus sanguineus</i> s.l.
		<i>Amblyomma ovale</i>
Costa Rica	<i>Rickettsia amblyommatis</i>	<i>Amblyomma geayi</i> <i>Amblyomma longirostre</i> <i>Amblyomma mixtum</i> <i>Amblyomma ovale</i> <i>Amblyomma cf. parvum</i> <i>Amblyomma</i> spp. <i>Dermacentor nitens</i> <i>Rhipicephalus sanguineus</i> s.l.
	<i>Rickettsia bellii</i>	<i>Amblyomma geayi</i>
	<i>Rickettsia rickettsii</i>	<i>Amblyomma sabanerae</i> <i>Amblyomma mixtum</i> <i>Amblyomma varium</i> <i>Haemaphysalis leporispalustris</i>
	<i>Rickettsia</i> sp. st. IbR/CRC	<i>Ixodes ci. boliviensis</i>
	<i>Rickettsia</i> sp.	<i>Ixodes cf. minor</i> <i>Amblyomma ovale</i> <i>Rhipicephalus microplus</i> <i>Dermacentor latius</i>
	<i>Rickettsia rhipicephali</i>	<i>Ornithodoros knoxjonesi</i>
	Ca. “ <i>Rickettsia nicoyana</i> ”	<i>Amblyomma dissimile</i>
	<i>Rickettsia</i> sp. st. Colombianensi	<i>Amblyomma geayi</i>
	<i>Rickettsia</i> sp. ci. raoultii	<i>Amblyomma mixtum</i> <i>Amblyomma cf. parvum</i> <i>Dermacentor nitens</i> <i>Rhipicephalus sanguineus</i> s.l.
	<i>Rickettsia amblyommatis</i>	<i>Amblyomma sabanerae</i> <i>Amblyomma ovale</i>
	<i>Rickettsia bellii</i>	<i>Amblyomma ovale</i>
	<i>Rickettsia parkeri</i>	<i>Amblyomma dissimile</i> <i>Amblyomma scutatum</i>
	Ca. “ <i>R. Colomnianensis</i> ”	<i>Amblyomma cajennense</i> s.l.
	<i>Rickettsia</i> sp.	<i>Amblyomma longirostre</i> <i>Amblyomma mixtum</i>
	<i>Rickettsia amblyommatis</i>	<i>Amblyomma dissimile</i>
Honduras	<i>Rickettsia</i> st. Colombianensi	<i>Amblyomma sculptum</i>
	<i>Rickettsia amblyommatis</i>	<i>Amblyomma ovale</i> <i>Amblyomma triste</i> <i>Amblyomma maculatum</i> <i>Dermacentor dissimilis</i> <i>Rhipicephalus sanguineus</i> s.l.
Nicaragua	<i>Rickettsia africae</i>	<i>Amblyomma auricularium</i>
	<i>Rickettsia</i> st. Aragoi	<i>Amblyomma geayi</i> <i>Amblyomma longirostre</i> <i>Amblyomma mixtum</i> <i>Amblyomma ovale</i> <i>Amblyomma pacae</i> <i>Amblyomma varium</i> <i>Dermacentor nitens</i> <i>Haemaphysalis juxtakochi</i>
	<i>Rickettsia</i> spp.	
Panamá	<i>Rickettsia amblyommatis</i>	

	<i>Rickettsia bellii</i>	<i>Rhipicephalus sanguineus</i> s.l. <i>Ctenocephalides felis</i> <i>Amblyomma sabanerae</i> <i>Amblyomma dissimile</i> <i>Amblyomma rotundatum</i> <i>Amblyomma mixtum</i>
	<i>Rickettsia rickettsii</i>	<i>Amblyomma mixtum</i> <i>Rhipicephalus sanguineus</i> s.l. <i>Dermacentor nitens</i>
	Ca. "R. Colomnianensis"	<i>Amblyomma dissimile</i>
	<i>Rickettsia</i> sp.	<i>Ixodes affinis</i>
	<i>Rickettsia</i> sp.	<i>Ixodes</i> cf. <i>boliviensis</i>
	<i>Rickettsia</i> sp.	<i>Ixodes tapirus</i>
	<i>Rickettsia</i> sp. ci. <i>raoultii</i>	<i>Amblyomma geayi</i>
	<i>Rickettsia</i> sp. ci. <i>tamurae</i>	<i>Amblyomma dissimile</i>
Country	Anaplasmataceae	Arthropod species
Costa Rica	<i>Ehrlichia canis</i>	<i>Rhipicephalus sanguineus</i> s.l.
Nicaragua		
Panamá	<i>Anaplasma marginale</i> <i>Anaplasma platys</i> <i>Anaplasma phagocitophilum</i>	<i>Rhipicephalus microplus</i> <i>Rhipicephalus sanguineus</i> s.l. <i>Ixodes tapirus</i> <i>Rhipicephalus microplus</i>
	<i>Ehrlichia canis</i> <i>Ehrlichia</i> ci. <i>chaffeensis</i>	<i>Rhipicephalus sanguineus</i> s.l. <i>Amblyomma mixtum</i> <i>Dermacentor nitens</i>
Country	Borrelia	Arthropod species
Panamá	<i>Borrelia recurrentis</i> s.l.	<i>Ornithodoros rudis</i> <i>Alecterobius talaje</i> <i>Alecterobius puertoricensis</i>
	<i>Borrelia puertoricensis</i> <i>Borrelia burgdorferi</i> group	<i>Ixodes</i> cf. <i>boliviensis</i>
Country	Hemoparasite	Arthropod species
Panama	<i>Hepatozoon</i> spp. <i>Babesia odocoilei</i>	<i>Ixodes</i> cf. <i>boliviensis</i> <i>Ixodes</i> cf. <i>boliviensis</i>

Selected references in support to Dataset S3

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Dataset S4. Distribution of ticks and tick-borne pathogens worldwide.

Country	Most recorded Tick specie	Pathogens
United States of America	Human: <i>Ixodes scapularis</i> <i>Amblyomma americanum</i> <i>Dermacentor variabilis</i> <i>Ixodes pacificus</i> <i>Dermacentor andersoni</i> <i>Otobius megnini</i> <i>Ornithodoros coriaceus</i>	<i>Borrelia burgdorferi</i> sensu stricto and <i>Borrelia mayonii</i> (Lyme disease) <i>Borrelia miyamotoi</i> (hard tick-borne relapsing fever) <i>Anaplasma phagocytophilum</i> (human anaplasmosis) <i>Ehrlichia muris eauclairensis</i> , <i>Ehrlichia chaffeensis</i> , <i>Ehrlichia ewingii</i> (ehrlichiosis) <i>Babesia microti</i> (babesiosis) <i>Babesia duncani</i> <i>Francisella tularensis</i> (Tularemia) <i>Borrelia hermsii</i> , <i>B. turicata</i> , <i>B. parkeri</i> <i>Rickettsia rickettsii</i> (Rocky Mountain spotted fever) <i>Rickettsia philipii</i> (Pacific Coast tick fever) <i>Rickettsia parkeri</i> (other spotted fever) Powassan virus (Powassan encephalitis) Colorado tick fever virus (Colorado tick fever)
	Other: <i>Ixodes cookei</i> , <i>Dermacentor occidentalis</i> , <i>Rhipicephalus sanguineus</i> sensu lato, <i>Dermacentor albipictus</i> , and <i>Amblyomma maculatum</i> Cattle: <i>Rhipicephalus annulatus</i> <i>Rhipicephalus microplus</i> <i>Haemaphysalis longicornis</i> (Asian longhorned ticks) <i>Ambylomma hebraeum</i> and <i>Amblyomma variegatum</i> (Bont and Tropical Bont Ticks)	Bourbon virus Heartland virus Cattle: Bovine babesiosis and anaplasmosis <i>Theileria orientalis Ikeda</i> <i>Ehrlichia ruminantium</i> Nairobi sheepdisease
Alasca	Native species <i>Haemaphysalis leporispalustris</i> <i>Ixodes angustus</i> <i>Ixodes auritulus</i> <i>Ixodes howelli</i> <i>Ixodes signatus</i>	

	<i>Ixodes uriae</i>	
	Non-native species <i>A. americanum</i> <i>Dermacentor andersoni</i> <i>D. occidentalis</i> <i>Dermacentor variabilis</i> <i>Ixodes pacificus</i> <i>Ixodes ricinus</i> <i>Ixodes scapularis</i> <i>Ixodes texanus</i> <i>Rhipicephalus sanguineus</i> s.l.	
Mexico	Most common: <i>Rhipicephalus microplus</i> , <i>Rhipicephalus sanguineus</i> Other: <i>Amblyomma</i> spp., <i>Dermacentor</i> spp., <i>Ixodes</i> spp., <i>Otobius megnini</i>	Human: <i>Rickettsia rickettsia</i> (Rickettsiosis) <i>B. burgdorferi</i> <i>B. microti</i> <i>A. phagocytophilum</i> Cattle: Babesiosis and Anaplasmosis Horses: Equine babesiosis and Theileriosis Dogs: <i>Canine babesiosis (B. vogeli)</i> <i>Ehrlichia canis</i> <i>Anaplasma platys</i> <i>A. phagocytophilum</i>
Central America	<i>Amblyomma mixtum</i> <i>Amblyomma ovale</i> <i>Dermacentor nitens</i>	Rickettsiosis (<i>Rickettsia rickettsii</i>) Others:

	<i>Rhipicephalus microplus</i> <i>Rhipicephalus sanguineus</i> s.l. <i>Alectorobius puertoricensis</i> <i>Alectorobius talaje</i>	Ehrlichiosis (<i>E. canis</i> , <i>E. cf. chaffeensis</i>) Anaplasmosis (<i>A. marginale</i> , <i>A. phagocitophilum</i> , <i>A. platys</i>) Relapsing fever Babesiosis (<i>B. odocoilei</i> , <i>B. vogeli</i>) <i>Borrelia</i> (<i>B. puertoricensis</i> , <i>Borrelia burgdorferi</i> group) Hepatozoon (<i>H. canis</i> , <i>Hepatozoon</i> spp)
Guatemala	<i>Ornithodoros talaje</i> <i>Amblyomma sabanerae</i>	
Panamá	<i>Amblyomma auricularium</i> <i>Amblyomma geayi</i> <i>Amblyomma longirostre</i> <i>Amblyomma mixtum</i> <i>Amblyomma ovale</i> <i>Amblyomma paca</i> <i>Amblyomma varium</i> <i>Amblyomma sabanerae</i> <i>Amblyomma dissimile</i> <i>Amblyomma rotundatum</i> <i>Dermacentor nitens</i> <i>Haemaphysalis juxtakochi</i> <i>Rhipicephalus sanguineus</i> s.l. <i>Ctenocephalides felis</i> <i>Ixodes affinis</i> <i>Ixodes cf. boliviensis</i> <i>Ixodes tapirus</i> <i>Ornithodoros rudis</i> <i>Alecterobius talaje</i> <i>Alecterobius puertoricensis</i>	<i>Rickettsia amblyommatis</i> <i>Rickettsia bellii</i> <i>Rickettsia rickettsii</i> Ca. “ <i>R. Colomnianensis</i> ” <i>Rickettsia</i> sp. <i>Rickettsia</i> sp. ci. <i>raoultii</i> <i>Rickettsia</i> sp. ci. <i>Tamurae</i> <i>Anaplasma marginale</i> <i>Anaplasma platys</i> <i>Anaplasma phagocitophilum</i> <i>Ehrlichia canis</i> <i>Ehrlichia</i> ci. <i>chaffeensis</i> <i>Borrelia recurrentis</i> s.l. <i>Borrelia puertoricensis</i> <i>Borrelia burgdorferi</i> group <i>Hepatozoon</i> spp. <i>Babesia odocoilei</i>
Costa Rica	<i>Amblyomma geayi</i>	<i>Rickettsia amblyommatis</i>

	<i>Amblyomma longirostre</i> <i>Amblyomma mixtum</i> <i>Amblyomma ovale</i> <i>Amblyomma cf. parvum</i> <i>Amblyomma spp.</i> <i>Amblyomma dissimile</i> <i>Amblyomma sabanerae</i> <i>Amblyomma varium</i> <i>Dermacentor nitens</i> <i>Dermacentor latus</i> <i>Rhipicephalus sanguineus s.l.</i> <i>Rhipicephalus microplus</i> <i>Haemaphysalis leporispalustris</i> <i>Ixodes ci. boliviensis</i> <i>Ixodes cf. minor</i> <i>Ornithodoros knoxjonesi</i>	<i>Rickettsia bellii</i> <i>Rickettsia rickettsii</i> <i>Rickettsia sp. st. IbR/CRC</i> <i>Rickettsia sp.</i> <i>Rickettsia rhipicephali</i> <i>Ca. "Rickettsia nicoyana"</i> <i>Rickettsia sp. st. Colombianensi</i> <i>Rickettsia sp. ci. raoultii</i> <i>Ehrlichia canis</i>
Belize	<i>Amblyomma pacae</i> <i>Amblyomma cajennense s.l.</i> <i>Amblyomma ci. maculatum</i> <i>Amblyomma maculatum</i> <i>Amblyomma ovale</i> <i>Ixodes affinis</i> <i>Rhipicephalus sanguineus s.l.</i>	<i>Rickettsia amblyommatis</i> <i>Rickettsia parkeri</i> <i>Rickettsia st. Atlantic Rainforest</i> <i>Rickettsia sp.</i>
El Salvador	<i>Amblyomma mixtum</i> <i>Amblyomma cf. parvum</i> <i>Dermacentor nitens</i> <i>Rhipicephalus sanguineus s.l.</i> <i>Amblyomma sabanerae</i> <i>Amblyomma ovale</i> <i>Amblyomma dissimile</i> <i>Amblyomma scutatum</i> <i>Amblyomma cajennense s.l.</i>	<i>Rickettsia amblyommatis</i> <i>Rickettsia bellii</i> <i>Rickettsia parkeri</i> <i>Ca. "R. Colomnianensis"</i> <i>Rickettsia sp.</i>

Honduras	<i>Amblyomma longirostre</i> <i>Amblyomma mixtum</i> <i>Amblyomma dissimile</i>	<i>Rickettsia amblyommatis</i> <i>Rickettsia st. Colombianensi</i>
Brazil	<p>Human: <i>Amblyomma sculptum</i> larvae and nymphs <i>Amblyomma aureolatum</i> <i>Ornithodoros</i> spp.</p> <p>Cattle: <i>Rhipicephalus microplus</i></p> <p>Horse: <i>Amblyomma sculptum</i> and <i>Dermacentor nitens</i></p> <p>Dogs: <i>Rhipicephalus sanguineus</i> complex (<i>Rhipicephalus linnaei</i>) <i>Amblyomma aureolatum</i></p> <p>Wild carnivores: <i>Amblyomma aureolatum</i> <i>Amblyomma ovale</i> <i>Amblyomma tigrinum</i></p>	<p>Human: <i>Rickettsia rickettsii</i> (Brazilian Spotted-Fever) <i>Rickettsia parkeri</i> strain Atlantic rainforest <i>Borrelia</i> spp.</p> <p>Cattle: <i>Babesia</i> spp. and <i>Anaplasma marginale</i> (Bovine parasitic sadness)</p> <p>Horses: <i>Babesia caballi</i> and <i>Theileria equi</i> (Equine Piroplasmosis)</p> <p>Dogs: <i>Ehrlichia canis</i> (canine monocytic ehrlichiosis) <i>Babesia vogeli</i> (canine piroplasmosis) <i>Rickettsia rickettsii</i> <i>Rangelia vitalii</i> (canine rangeliiosis) Hepatozoidae species (e.g., <i>Hepatozoon canis</i>)</p> <p>Wild carnivores: <i>Rickettsia rickettsii</i> <i>Rickettsia parkeri</i> Atlantic rainforest strain <i>Rickettsia parkeri</i> sensu stricto</p>
Europe	<i>Ixodes ricinus</i> <i>Haemaphysalis punctata</i> <i>Rhipicephalus</i> spp. <i>Hyalomma marginatum</i> <i>Dermacentor</i> spp.	Ruminants and carnivores: <i>Babesia</i> spp. <i>Theileria</i> spp. <i>Anaplasma ovis</i> <i>Anaplasma phagocytophilum</i>

		<i>Borrelia</i> spp. <i>Ehrlichia</i> spp. <i>Neoehrlichia</i> Tick-borne encephalitis virus
Egypt	<i>Hyalomma</i> sp. <i>Rhipicephalus</i> sp.	Humans: Anaplasmosis Borreliosis Coxiella burnetii (Q fever) Tick-borne rickettsiosis Babesiosis Alkhurma hemorrhagic fever Crimean-Congo Hemorrhagic fever Livestock: Anaplasmosis Babesiosis Theileriosis Q fever
Uganda	Human: <i>Hyalomma</i> Cattle: <i>Rhipicephalus appendiculatus</i> <i>Rhipicephalus decoloratus</i> <i>Amblyomma variegatum</i> <i>Rhipicephalus evertsi evertsi</i>	Human: Crimean-Congo Hemorrhagic fever virus Cattle: <i>Theileria parva</i> <i>Babesia bovis</i> <i>B. bigemina</i> <i>Anaplasma marginale</i> <i>Ehrlichia ruminantium</i>
Nigeria	<i>Boophilus</i> sp. <i>Amblyomma</i> sp. <i>Rhipicephalus</i> sp. <i>Haemophysalis</i> sp. <i>Aponomma</i> sp.	Babesiosis Anaplasmosis Theileriosis Ehrlichiosis

India	<i>Hyalomma</i> sp.	
	<p>Humans:</p> <p><i>Amblyomma integrum</i></p> <p><i>Haemaphysalis spinigera</i></p> <p><i>Dermacentor auratus</i></p> <p><i>Hyalomma isaaci</i></p> <p><i>Rhipicephalus haemaphysaloides</i></p> <p><i>Rhipicephalus sanguineus</i> s.l.</p> <p><i>Otobius megnini</i></p> <p>Cattle:</p> <p><i>Rhipicephalus microplus</i></p>	<p>Human:</p> <p>Kyasanur forest disease virus</p> <p>Crimean-Congo Hemorrhagic fever virus</p> <p>Ganjam virus</p> <p>Bhanja virus</p> <p><i>Borrelia burgdorferi</i> and <i>B. mayonii</i> (Lyme disease)</p> <p>Coxiella burnetii (Q fever)</p> <p><i>Rickettsia conorii</i> and <i>R. rickettsii</i></p> <p><i>Babesia microti</i> (Babesiosis)</p> <p>Animals:</p> <p>Theileriosis</p> <p>Babesiosis</p> <p>Anaplasmosis</p> <p>Ehrlichiosis</p> <p>Lumpy skin disease virus</p>
Nepal	<p>Cattle:</p> <p><i>Rhipicephalus microplus</i></p> <p><i>Haemophysalis</i> spp.</p> <p><i>Ixodes</i> spp.</p> <p><i>Amblyomma</i> spp.</p> <p>Goats:</p> <p><i>Haemophysalis</i> spp.</p> <p><i>Rhipicephalus</i> spp.</p> <p><i>Amblyomma</i> sp.</p> <p><i>Ixodes</i> sp.</p>	<p>Human:</p> <p><i>Rickettsia honei</i></p> <p><i>Borrelia burgdorferi</i> and <i>B. mayonii</i> (Lyme disease)</p> <p>Cattle:</p> <p><i>Anaplasma marginale</i></p> <p><i>Babesia bovis</i></p> <p><i>Coxiella burnetii</i></p> <p><i>Theileria annulata</i></p> <p>Dogs:</p> <p><i>Anaplasma platys</i></p> <p><i>Babesia vogeli</i></p> <p><i>Babesia gibsoni</i></p>
Indonesia	<i>Varanus komodoensis</i> :	<i>Varanus komodoensis</i> :

	<i>Amblyomma robinsoni</i> <i>Aponomma komodoense</i> <i>Babirussa babirussa</i> : <i>Amblyomma babirussae</i> <i>Varanus salvator</i> : <i>Amblyomma soembawensi</i> Livestock and Companion animals: <i>Rhipicephalus sanguineus</i> s.l. <i>Rhipicephalus microplus</i> <i>Rhipicephalus pilans</i> <i>Haemaphysalis bispinosa</i>	<i>Anaplasma</i> spp., <i>Rickettsia</i> spp., and <i>Borrelia</i> spp. Livestock: <i>Babesia bigemina</i> <i>Babesia bovis</i> <i>Babesia naoakii</i> <i>Theileria orientalis</i> <i>Theileria</i> sp. <i>A. marginale</i> <i>Coxiella burnetti</i> Companion animals: <i>Ehrlichia</i> sp. <i>Babesia</i> sp. <i>Anaplasma</i> sp.
Turkey	<i>Hyalomma marginatum</i> <i>Hyalomma excavatum</i> <i>Hyalomma anatolicum</i> <i>Hyalomma asiaticum</i> <i>Hyalomma aegyptium</i> <i>Rhipicephalus sanguineus</i> s.l. <i>Rhipicephalus turanicus</i> <i>Rhipicephalus bursa</i> <i>Haemaphysalis parva</i> <i>Dermacentor marginatus</i> <i>Ixodes ricinus</i>	<i>Ehrlichia canis</i> <i>Theileria</i> spp. (<i>Theileria ovis</i> , <i>T. annulata</i>) <i>Anaplasma</i> spp. (<i>A. marginale</i> , <i>A. phagocitophylum</i> , <i>A. platys</i> , <i>A. ovis</i> , <i>A. centrale</i> , <i>A. bovis</i>) <i>Borrelia</i> spp. (<i>B. burgdorferi</i> s.l., <i>B. turcica</i>) <i>Babesia</i> spp. (<i>Babesia ovis</i> , <i>B. bovis</i> , <i>B. bigemina</i> , <i>Babesia major</i> , <i>Babesia crassa</i> , <i>Babesia canis</i> and <i>B. divergens</i>) <i>Rickettsia</i> spp. (<i>Rickettsia aeschlimannii</i> , <i>Rickettsia</i> <i>hoogstraali</i> , <i>Rickettsia barbariae</i>) <i>Hepatozoon canis</i> Crimean-Congo Hemorrhagic fever virus
Australia	Mammalian: <i>Ixodes ornithorynchi</i> (platypus tick) <i>Amblyomma triguttatum</i> (ornate kangaroo tick) Avian:	New pathogens: <i>Borrelia taylori</i> <i>Neoehrlichia australis</i> <i>Neoehrlichia arcana</i> <i>Midichloria mitochondrii</i>

Argas robertsi

Reptilian:

Amblyomma albolimbatum

Ixodes holocyclus

Amblyomma triguttatum

Haemaphysalis longicornis

Coxiella massiliensis

hemotropic mycoplasmas

Anaplasma spp.

Ehrlichia spp.

Rickettsia spp.

Francisella

Rhabdoviruses

Chuviruses

Coltivurses

Flavivirus

Jingmenviruses

Theileria spp.

Babesia spp.

Trypanosoma spp.

Hepatozoon spp

Humans:

Rickettsia australis (Queensland spotted fever)

Rickettsia honei (Flinders Island spotted fever)

Coxiella burnetii (Q Fever)

Livestock and Companion animals:

Anaplasma platys

A. marginale

Babesia bovis

B. bigemina

B. vogeli

Borrelia persica

T. orientalis complex

H. canis

E. canis
