Supplementary Table 1- General characteristics of the studies used to characterize the distribution of arboviruses and their associated risk factors.

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Balmaseda et al., 2016	Cohort	CHIKV	3 377 children	Socioeconomic	Healthy patients	96 confirmed cases
Bisanzio et al., 2018	Cohort	CHIKV DENV ZIKV	800 000	Meteorological factors and temperature rise	The population of Mérida (Mexico)	1 101 cases of CHIKV 40 028 cases of DENV 2 273 cases of ZIKV
Bonifay et al., 2018	Cross-sectional	CHIKV	285	No specific risk factors for atypical and/or severe forms were found in no. study	Suspected people	96 cases of chikungunya
Bonilla-Aldana et al., 2020	Cross-sectional	CHIKV ZIKV	496 262	Precipitation: increased riparian density	Healthy population	825 cases of chikungunya 1079 cases of zika
Bowman et al., 2018	Cross-sectional Retrospective	DENV ZIKV	9.98 million	Precipitation and temperature rise	Healthy people	75% of the population was positive for dengue and ≈ 42% of the population positive for zika
Brooks et al., 2017	Cross-sectional	ZIKV	183	Tourist areas	Healthy people, with chikungunya and dengue	79 cases of zika
Carrillo-Hernández et al., 2018	Cross-sectional	CHIKV DENV ZIKV	157	Elevated temperature	The distinction between those infected with arboviruses/healthy people	47 cases of chikungunya 33 cases of dengue 29 cases of zika

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Castanha et al., 2017	Cohort	DENV	451	Maternal seropositivity and male gender	Newborn population	49 dengue cases
Coelho et al., 2016	Cross-sectional	ZIKV DENV	Population residing in Rio de Janeiro (6.4 million inhabitants)	Cocirculation of DENV and ZIKV	Suspected patients	29 301 cases of ZIKV 102 754 cases of DENV
Costa et al., 2018	Ecological	CHIKV DENV ZIKV	Probable cases of DENV, CHIKV and ZIKV in the state of Maranhão (Brazil), notified to SINAN.	Presence of the vector	Distribution by regions of the State	Dengue predominated in the West and Center-South Zika, in the West and North Chikungunya to the North
Costa et al., 2019	Cross-sectional	CHIKV DENV	1000	Age and gender	Within the patients themselves	500 cases of DENV 500 cases of CHIKV
De Castro et al., 2018	Ecological	DENV	The population of Amazonas (3 483 985 million inhabitants)	Climatic factors (rainy periods)	Within the patients themselves	85 216 confirmed cases of dengue
De Souza Costa et al., 2018	Cross-sectional	DENV ZIKV	453 cases of arboviruses	Demographic association	Within the patients themselves	35 positive cases and 4 cases were co-infections.
Dias et al., 2018	Cross-sectional	CHIKV	385	Hot semi-arid climate	Healthy population	220 cases of chikungunya

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Dirección General de Vigilancia para la Salud, Ministerio del Poder Ciudadano para la Salud de Nicaragua, 2017	Cross-sectional	CHIKV	11 280	Hot climate	Healthy population	3 609 cases of chikungunya
Dourado et al., 2019	Cross-sectional Retrospective	CHIKV	300 elderly	diseases: diabetes mellitus, hematological, chronic kidney, liver, gastric, and autoimmune diseases	Within the patients themselves	289 individuals with low back pain, and 300 with arthralgia
Farinelli et al., 2018	Ecological	DENV	Population from Várzea Paulista (São Paulo, Brazil) (107 089 thousand inhabitants)	Socioeconomic factors	Within the patients themselves	345 confirmed cases (294 by serological tests and 51 by a clinical evaluation)
Fors et al., 2018	Cross-sectional, descriptive, and retrospective	ZIKV	467	Rainy periods	Population healthy	148 cases of zika
Freitas et al., 2018	Cross-sectional	CHIKV	28 327	Difficulty in recognizing the etiology of severe clinical forms and deaths	Healthy population	4 339 cases of chikungunya
Fuller et al., 2017	Ecological	CHIKV ZIKV	individuals	Climatic factors (rainy periods)	Within the patients themselves	3 887 confirmed cases (1,717 of ZIKV and 2,170 of CHIKV)

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Gallian et al., 2017	Cohort	CHIKV	Age	classes and blood groups	Healthy population	7 865 chikungunya cases
Garcell et al., 2020	Cross-sectional	ZIKV	1 541 individuals	Demographic association	Within the patients themselves	279 cases of ZIKV
Gordon et al., 2018	Cohort	CHIKV	4 353 children	2 chikungunya epidemic waves	Suspected people	539 chikungunya cases have been documented
Gordon et al., 2019	Cohort	DENV ZIKV	3 700	Areas of medium and low socioeconomic status	Prior DENV infection	374 Zika cases and 708 dengue cases.
Gregianini et al., 2018	Cross-sectional	DENV	13 420	Meteorological factors, transport, tourism, sanitary conditions, and host immunity	Healthy population	3 938 dengue cases
Guerra-Gomes et al., 2017	Cross-sectional	DENV	55 674	Circulation of more than one type of serotype	Healthy people	39 083 dengue cases
Henry et al., 2017	Cross-sectional	CHIKV	658 individuals	Tropical areas	Suspected patients	390 confirmed cases of CHIKV
Hsu et al., 2019	Cross-sectional Retrospective	CHIKV	3 035	Tropical Climate	Suspected people (acute febrile illness)	1 469 cases of chikungunya

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Johansen et al., 2018	Ecological	DENV	1 688 households in Caraguatatuba - 2013	Strategic points for the dissemination of vectors	Own population	Live within a radius of 300 meters around junkyards, tire repair shops, or recyclable material depots.
Kazazian et al., 2020	Cross-sectional	CHIKV DENV ZIKV	213 573	Division by neighborhood, related to tropical areas	Diffusion difference	77 319 dengue cases, 52 690 cases of zika and dengue (coinfection), 83 564 chikungunya cases
Kenneson et al., 2017	Cohort	DENV	354	Proximity to abandoned properties, interruption of running water, and shaded patios.	Seropositivity among families	139 cases of dengue
Kumar; Best. Benskin, 2017	Prospective Cohort	CHIKV	203 children aged <15	Age 10-<15	Healthy patient	69 chikungunya cases
Lizarazo et al., 2019	Cross-sectional	CHIKV	Caribbean population (3 months)	Southwest and northeast areas of the capital	Healthy population	810 chikungunya cases
Lovera et al., 2019	Cross-sectional	DENV	784 positive	Serotype 2 infection, a second infection	Serotypes among positive patients	471 DENV-2 cases
Lozier et al., 2018	Cross-sectional	ZIKV	367	Close to empty houses	Healthy people	114 cases of zika

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Magalhaes et al., 2017	Prospective cohort	CHIKV ZIKV	263	Increase of chikungunya in dry seasons. Urban areas	Suspected patients (febrile)	26 cases of zika, 132 cases of chikungunya, 2 co
Martínez-Bello; Lopez-Quilez; Pietro, 2019	Ecological	DENV ZIKV	2 million	Associated by munitions and the coexistence of circulating viruses	Population of Colombia	9 799 cases of zika, 899 cases of
McHale co-infection, 2019	Cross-sectional	CHIKV ZIKV	140 neighborhoods of Barranquilla 2017	Social vulnerability	Healthy population	1865 chikungunya, 7 029 zika
Méndez et al ., 2017	Cross-sectional	CHIKV	The population of Mérida (Mexico)	Urban areas, advanced age, and gender	Within the patients themselves	803 confirmed cases of CHIKV
Mercado-Reyes, 2019	Cross-sectional	CHIKV DENV ZIKV	59 646	Mortality: coinfection	The distinction between those infected with arboviruses/healthy people	439 cases of dengue, 10 118 cases of zika, 257 cases of chikungunya; 34 coinfections (Zika + Chikungunya)
Murillo-Zamora et al., 2017	Retrospective multicenter cohort	CHIKV	150	Advanced age: rheumatic pain	Healthy volunteers	136 cases of chikungunya
Nascimento et al., 2020	Cross-sectional Retrospective	DENV	170 477	Temperature and precipitation	People with positive dengue	Women and young adults are the most affected. The rain had more influence.

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Nsoesie et al., 2015	Cross-sectional	CHIKV	417	Rainy season from June to December and a dry season from January to May	Healthy population	66 cases of Chikungunya
Oviedo-Pastrana et al., 2018	Cross-sectional	CHIKV	971	Hot weather	Suspected people	516 cases of chikungunya
Pavía-Ruz et al., 2018	Cohort	DENV	1 844	Sharing common domestic areas, increasing age	Seronegative children aged 0-15 years	863 dengue cases
Poirier et al., 2016	Cohort and Cross-sectional	CHIKV DENV	Cohort: 61 Cross-sectional:127	Exposure to newly introduced chikungunya virus in Haiti	Exposure to endemic dengue virus and other pathogens	Cohort (2011 to 2014): 48 cases of chikungunya; Cross-section (2014): 96 cases of chikungunya and 77 cases of dengue.
Reller et al., 2016	Cohort	DENV	740	Rainy seasons, exposure to farm animals	Seronegative enrollees	666 seropositive for IgM or IgG
Rico-Mendoza et al., 2019	Cross-sectional	CHIKV DENV ZIKV	186 177	Rainy seasons and sanitation	Suspected people	48 712 dengue cases, 19 205 chikungunya cases, 2,485 zika cases
Robert et al., 2019	Cross-sectional	CHIKV DENV ZIKV	Probable and confirmed arbovirus cases in Córdoba	Temperature	rise Healthy population	1 429 cases of dengue, 23 cases of chikungunya, and 10 cases of zika

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Rodrigues et al., 2016	Ecological	DENV	5 570 municipalities in São Paulo	Meteorological, socioeconomic, and sanitation factors Resumen	Within the patients themselves	Facilitating factor association
Rodrigues et al., 2018	Cross-sectional	CHIKV DENV ZIKV	370	Poor sanitation	The distinction between those infected by arboviruses/ healthy people	78 cases of zika, 115 cases of chikungunya, 177 cases of dengue
Rodriguez-Morales et al., 20 16	Cross-sectional	ZIKV	1 412 230	Eastern area of municipalities	Healthy people	4 094 cases of zika
Rodriguez-Morales et al., 2017	Ecological	ZIKV	The population of Pereira (Colombia) (472,023 thousand inhabitants)	Meteorological factors	Within the patients themselves	439 confirmed cases of ZIKV
Rojas et al., 2018	Cohort	DENV	2 853	Second virus infection, sex, and location	Seronegative inhabitants	829 dengue cases
Rosenberg et al., 2019	Prospective cohort	ZIKV	613	Outdoor work and home living with these people	Healthy	366 cases of zika
Rueda et al., 2019	Cross-sectional nested in a cohort	CHIKV	548 patients	Socioeconomic	Healthy patients	295 cases of chikungunya

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Saba-Villarroel et al., 2018	Cross-sectional	ZIKV	814	Tropical areas	Healthy volunteers	213 cases of zika
Santana et al., 2020	Cross-sectional	CHIKV ZIKV	Population of Salvador (Bahia, Brazil) (2 938 092 million inhabitants)	Demographic association	Within the patients themselves	1 914 confirmed cases of zika 2120 confirmed cases from chikungunya
Sharp et al., 2020	Cross-sectional Retrospective	ZIKV	71 618	Populated areas	Healthy people, chikungunya and dengue	39 717 cases of zika
Silva et al., 2019	Cross-sectional	CHIKV DENV ZIKV	948	Salvador – Northeast Brazil.	healthy population	32 cases of dengue, 159 cases of chikungunya, 13 cases of zika, 20 (flavivirus). 23 cases of coinfections
Sippy et al., 2019	Ecological	DENV	Pichincha population (6 944 inhabitants) and population of Santo Domingo de los Tsáchilas 305 632 thousand inhabitants)	Climatic factors	Suspected patients	Climatic factors exerted greater risks for the disease, especially in regions of constant/frequent rain
Ster et al., 2020	Cross-sectional	DENV CHIKV	319	Advancing age	The distinction between those infected with arboviruses	245 dengue cases, 145 chikungunya cases

Author and year	Study type	Arbovirus	Population	Exposure	Comparison	Outcome
Stewart-Ibarra et al., 2018	Cross-sectional	DENV CHIKV	384	age (children)	Suspected people	35 cases of dengue, 52 cases of chikungunya,
Valenzuela et al., 2015	Cross-sectional	CHIKV	48 children	Tropical locations	Within the patients themselves	30 admissions
Viana et al., 2018	Cross-sectional	DENV	33 elderly	Education, marital status	Within the patients themselves	Prevalence of dengue.
Vidal et al., 2020	Cross-sectional	CHIKV	1 322	Tropical areas	Suspected patients	1 160 cases of chikungunya
Zambrana et al., 2018	Cohort	ZIKV	1 918 (seropositivity)	Advancing age and male gender	Seronegative people	1 074 Zika cases
Zambrano et al., 2017	Cross-sectional	CHIKV DENV	104 675	Demographic association, tourism	Population of Honduras	The cumulative gross national rate is estimated at 224.9 cases / 100 000 pop for dengue and 995.6 for chikungunya.
Zambrano et al., 2019	Cross-sectional Retrospective	DENV CHIKV	109 557	Meteorological factors	Between the years 2015-2019	The peak in 2019 with 28 603 cases, after a decline
Zambrano et al., 2019	Cross-sectional Retrospective	ZIKV	8 866 351	Areas of low socioeconomic status	Healthy population	32 607 Zika cases

Source: Author