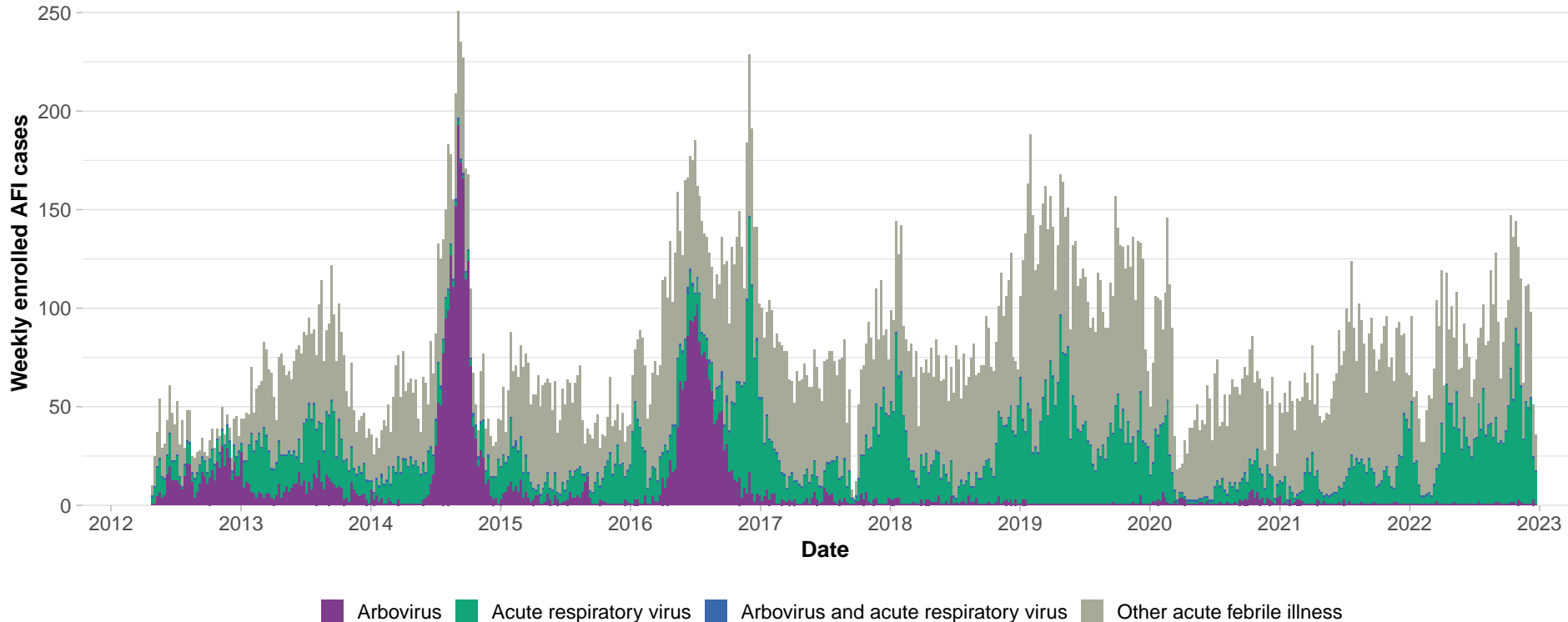
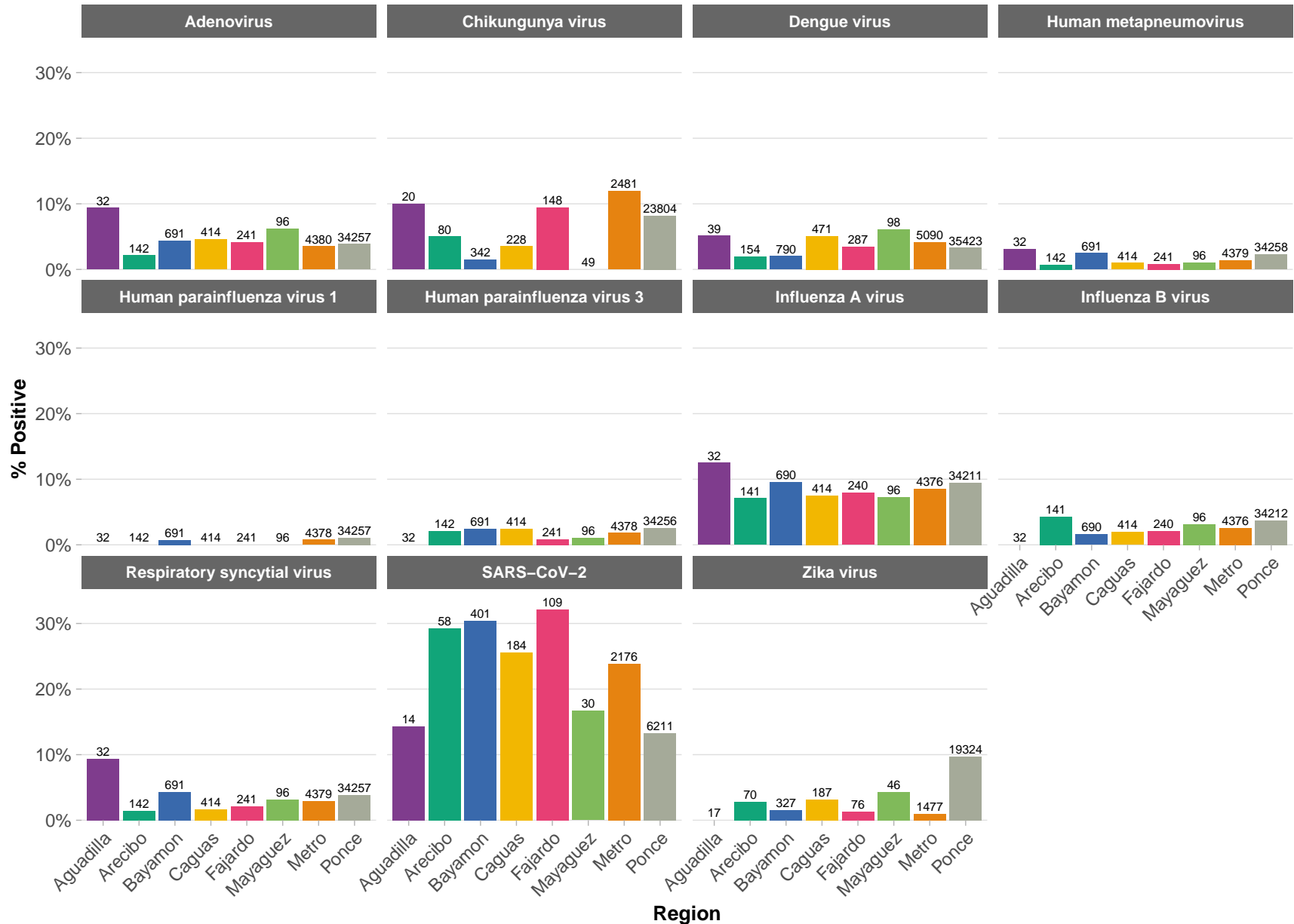


Supplementary Figure 1. Weekly acute febrile illness cases with and without arboviral or acute respiratory viral infections, May 2012 – December 2022.

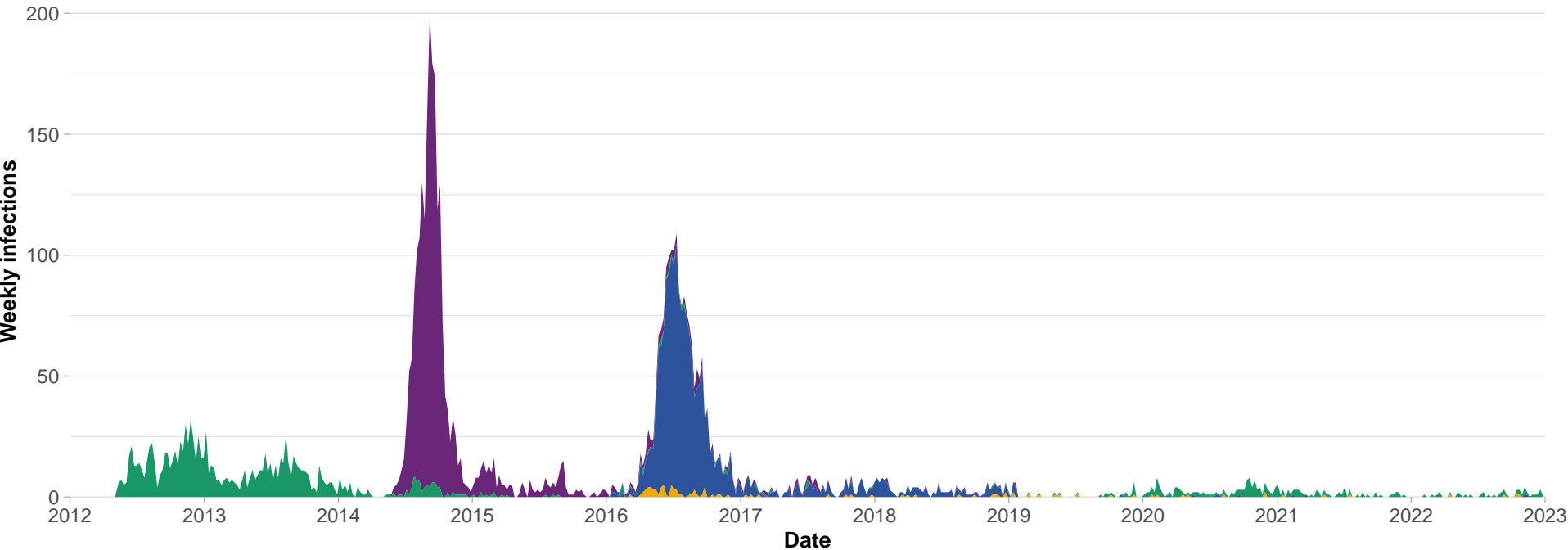


**Supplementary Figure 2. Proportion of acute febrile illness cases testing positive for arboviruses and acute respiratory viruses by Puerto Rican Department of Health regions, May 2012 – December 2022.**



The number of tests for each virus in each region is shown.

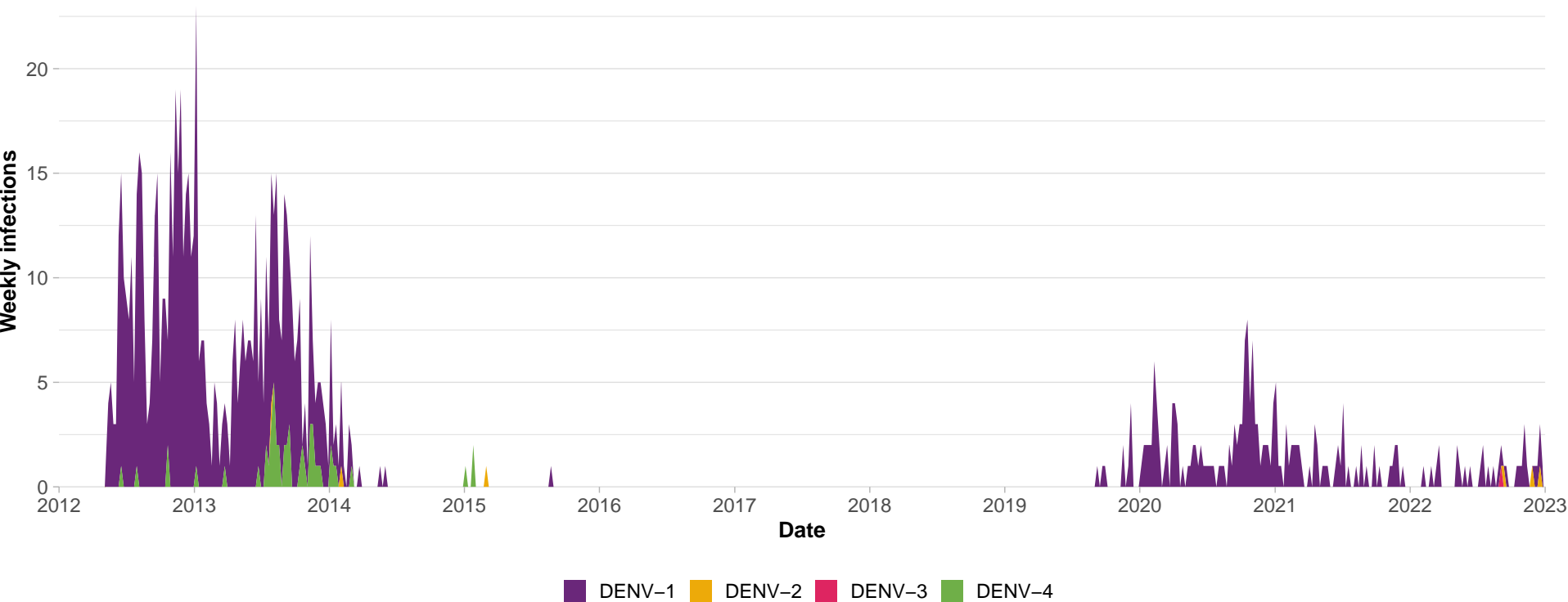
Supplementary Figure 3. Epidemic curve of confirmed or probable dengue, chikungunya, and Zika cases from May 2012 – December 2022.



Confirmed and probable CHIKV    Confirmed and probable DENV    Confirmed and probable ZIKV    Unspecified flavivirus

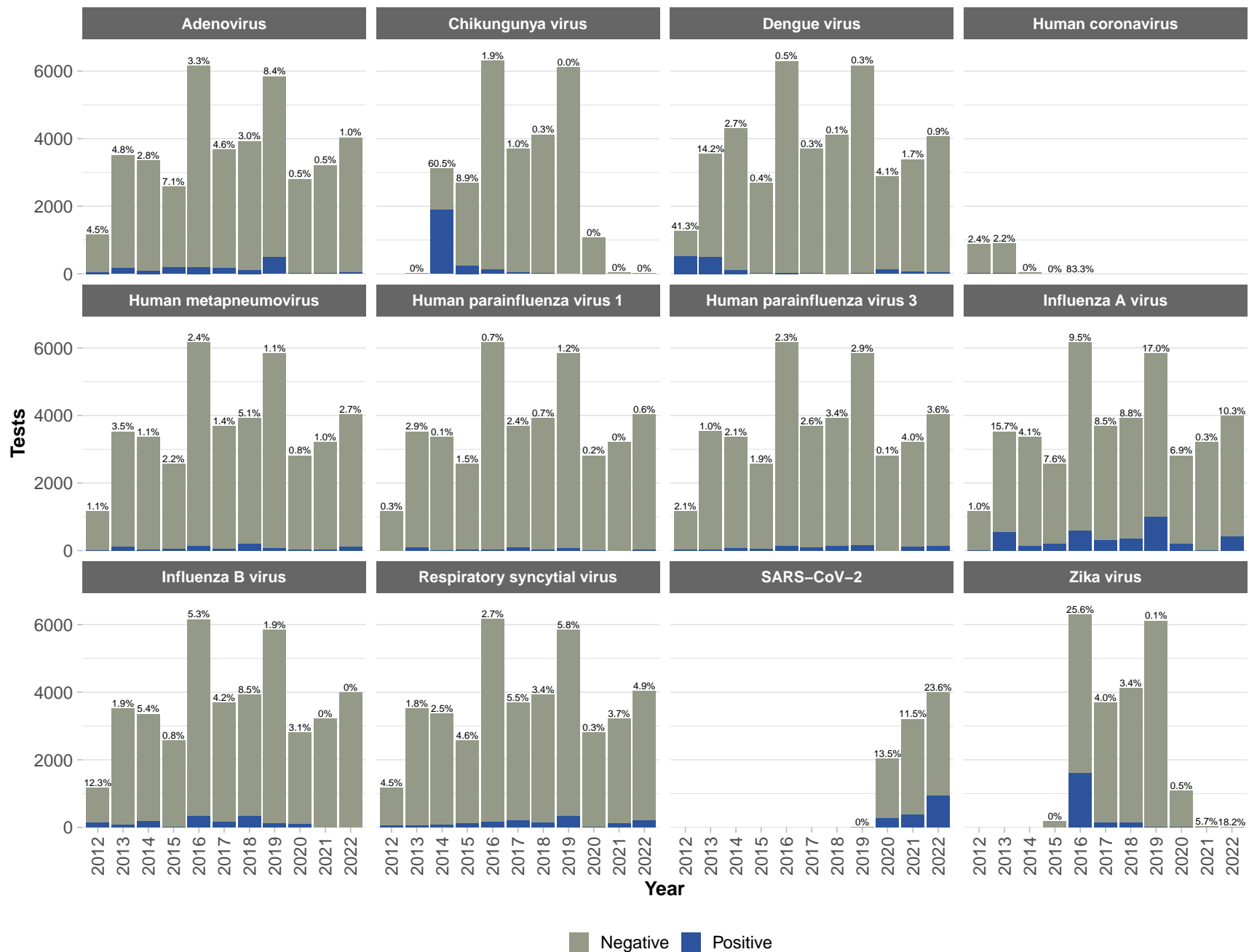
Cases were deemed to be laboratory-confirmed if a serum or urine specimen was PCR- or IgM-positive for a particular arbovirus.

Supplementary Figure 4. Epidemic curve of dengue serotypes 1 – 4 from May 2012 – December 2022.

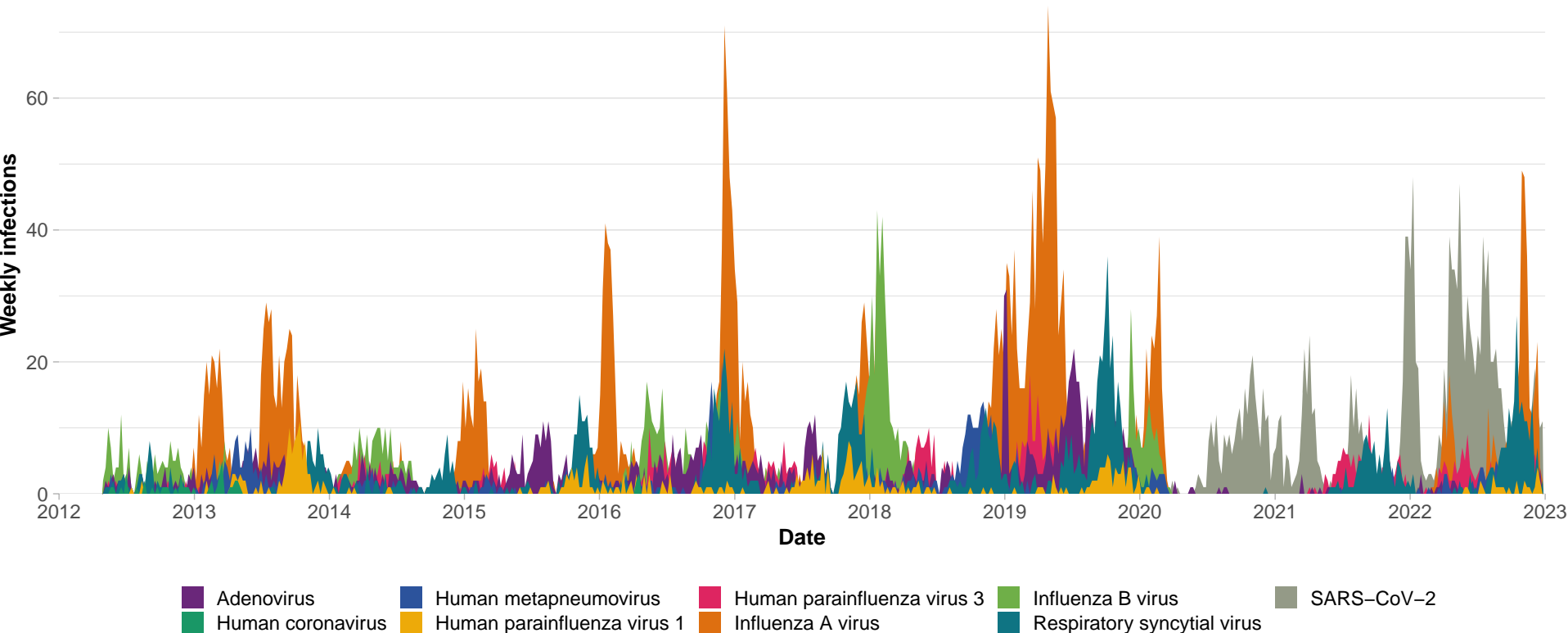


Dengue cases were assigned a serotype if a patient's serum specimen was PCR-positive for a specific DENV serotype.

**Supplementary Figure 5. Number of tests for arboviruses or acute respiratory viruses, and proportion of tests that were positive for each virus by year, May 2012 – December 2022.**

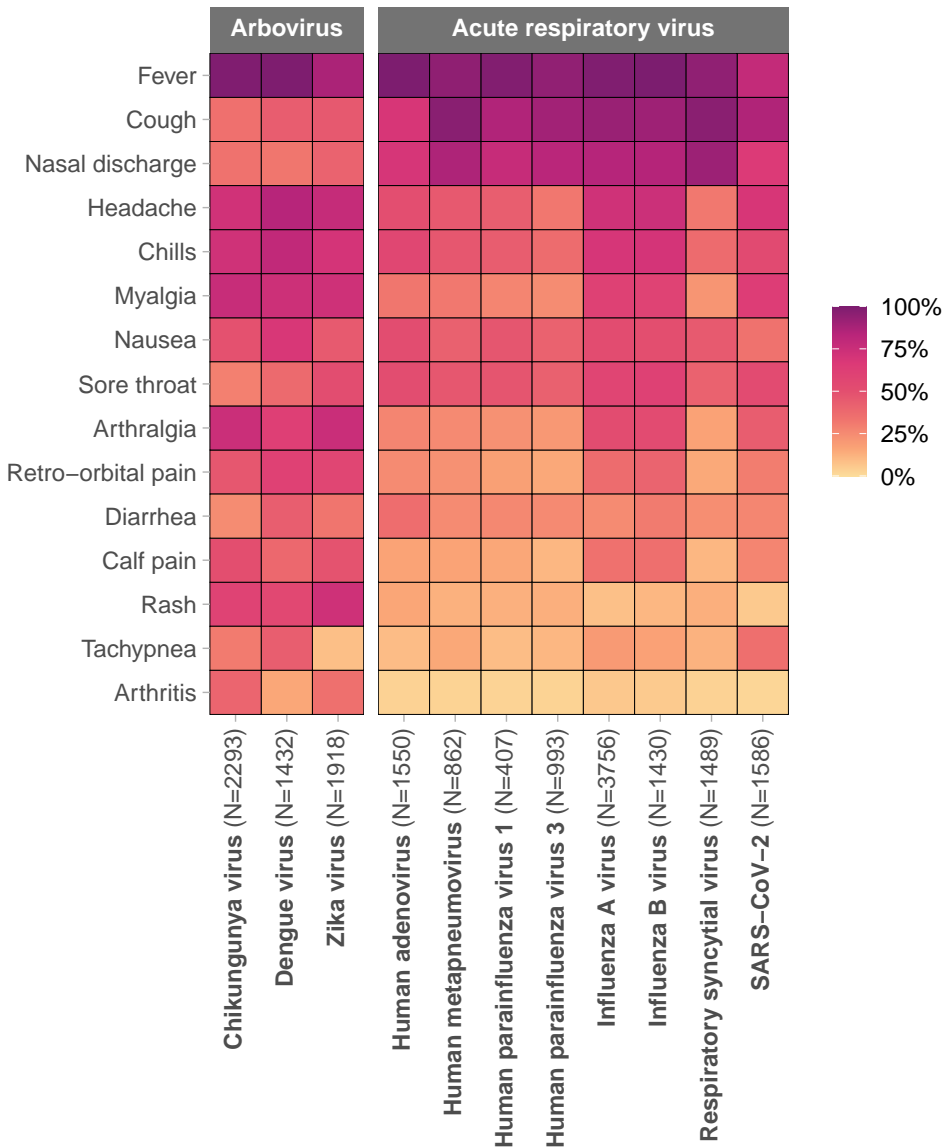


Supplementary Figure 6. Epidemic curve of respiratory viruses from May 2012 – December 2022.



Respiratory viruses were identified and confirmed by RT-PCR testing of nasopharyngeal swabs.

**Supplementary Figure 7. Symptoms for laboratory-confirmed arboviral or acute respiratory viral cases, May 2012 – December 2022.**



**Supplementary Table 1. Number of eligible patients and number recruited into SEDSS, 2012 – 2022.\***

Year	Total of eligible patients	Total oriented	Total of recruited cases	% recruited	Refused	Dropout
<i>Saint Luke's Episcopal Hospital, Ponce</i>						
2012	5088	1597	1254	24.6	243	100
2013	9239	2485*	2395	25.9	–	90
2014	10935	2678*	2478	22.7	–	200
2015	7609	1829*	1700	22.3	–	129
2016	9743	5712	4427	45.4	1074	227
2017	8377	3736	2548	30.4	1033	75
2018	5149	3548	2444	47.5	980	27
2019	10280	4398	3155	30.7	1191	28
2020	4096	1413	1008	24.6	343	15
2021	6277	1989	1159	18.5	790	8
2022	11462	3357	1452	12.7	1847	6
<i>Saint Luke's Episcopal Hospital, Guayama</i>						
2013	4965	–	1091	22.0	–	–
2014	5951	1436*	1235	20.8	98	103
2015	4155	643	567	13.6	–	76
<i>Hospital de La Universidad de Puerto Rico, Carolina</i>						
2013	1093	107	99	9.1	–	8
2014	3689	696	668	18.1	–	28
2015	1308	677	669	51.1	–	8
<i>Centro de Emergencia y Medicina Integrada, Ponce</i>						
2016	3881	2080	1860	47.9	209	14
2017	3622	1356	1065	29.4	252	1
2018	4283	1908	1362	31.8	481	3
2019	5062	2228	1754	34.7	450	10
2020	1675	926	696	41.6	192	4
2021	2128	1386	1026	48.2	342	2
2022	4727	2661	1477	31.2	1066	0
<i>Auxilio Mutuo Hospital, San Juan†</i>						
2021	8953	–	1346	15.0	–	–
2022	15228	1494	1208	7.9	5	243

\* Estimate based on number of enrollees and dropouts.

† Number of eligible patients was unavailable for *Auxilio Mutuo Hospital* in San Juan (2018–2020).



**Supplementary Table 2. Number and percentage of cases with laboratory evidence of dengue, Zika, or chikungunya infection\*, by year — Puerto Rico, Sentinel Enhanced Dengue Surveillance System, 2012 – 2022.**

Characteristic	Dengue Cases			Chikungunya Cases			Zika Cases		
	Confirmed No. (%)	Probable No. (%)	Total No. (%)	Confirmed No. (%)	Probable No. (%)	Total No. (%)	Confirmed No. (%)	Probable No. (%)	Total No. (%)
2012	344 (35.9)	178 (37.6)	522 (36.5)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2013	364 (38.0)	140 (29.6)	504 (35.2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2014	28 (2.9)	88 (18.6)	116 (8.1)	1709 (94.7)	175 (35.8)	1884 (82.2)	0 (0)	0 (0)	0 (0)
2015	5 (0.5)	7 (1.5)	12 (0.8)	83 (4.6)	157 (32.1)	240 (10.5)	0 (0)	0 (0)	0 (0)
2016	5 (0.5)	25 (5.3)	30 (2.1)	9 (0.5)	109 (22.3)	118 (5.1)	1424 (98.3)	188 (40.1)	1612 (84.0)
2017	0 (0)	10 (2.1)	10 (0.7)	3 (0.2)	34 (7.0)	37 (1.6)	24 (1.7)	125 (26.7)	149 (7.8)
2018	0 (0)	3 (0.6)	3 (0.2)	0 (0)	12 (2.5)	12 (0.5)	1 (0.1)	138 (29.4)	139 (7.2)
2019	13 (1.4)	8 (1.7)	21 (1.5)	0 (0)	2 (0.4)	2 (0.1)	0 (0)	9 (1.9)	9 (0.5)
2020	111 (11.6)	7 (1.5)	118 (8.2)	0 (0)	0 (0)	0 (0)	0 (0)	5 (1.1)	5 (0.3)
2021	55 (5.7)	3 (0.6)	58 (4.1)	0 (0)	0 (0)	0 (0)	0 (0)	2 (0.4)	2 (0.1)
2022	34 (3.5)	4 (0.8)	38 (2.7)	0 (0)	0 (0)	0 (0)	0 (0)	2 (0.4)	2 (0.1)
<b>Total</b>	<b>959 (100)</b>	<b>473 (100)</b>	<b>1432 (100)</b>	<b>1804 (100)</b>	<b>489 (100)</b>	<b>2293 (100)</b>	<b>1449 (100)</b>	<b>469 (100)</b>	<b>1918 (100)</b>

\* Confirmed infection for the three arboviruses was by positive RT-PCR results. Before Zika, probable dengue included positive IgM tests. After Zika emerged, probable dengue included IgM positivity for DENV along with negative IgM results for ZIKV due to notable cross-reactivity between dengue IgM and Zika IgM antibodies in serologic tests.

**Supplementary Table 3. Number and percentage of cases with acute respiratory viral illness (caused by influenza, respiratory syncytial virus, adenovirus, human parainfluenza, human metapneumovirus, human coronaviruses, and SARS-CoV-2) among all participants assessed and tested, by year—Puerto Rico, Sentinel Enhanced Dengue Surveillance System, 2012 – 2022.**

Characteristics	Influenza	Influenza	Respiratory	Adenovirus	Human	Human	Human	Human	SARS-CoV-
	A	B	syncytial virus*		parainfluenza virus 1	parainfluenz a virus 3	metapneumo virus	coronavirus†	2
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
2012	12 (0.3)	144 (10.1)	53 (3.6)	52 (3.4)	27 (1.9)	24 (2.4)	13 (1.5)	21 (45.7)	0 (0)
2013	554 (14.7)	67 (4.7)	64 (4.3)	168 (10.8)	138 (9.9)	34 (3.4)	123 (14.3)	20 (43.5)	0 (0)
2014	139 (3.7)	183 (12.8)	84 (5.6)	95 (6.1)	77 (5.5)	72 (7.3)	38 (4.4)	0 (0)	0 (0)
2015	195 (5.2)	21 (1.5)	118 (7.9)	182 (11.7)	88 (6.3)	49 (4.9)	57 (6.6)	0 (0)	0 (0)
2016	586 (15.6)	326 (22.8)	166 (11.1)	203 (13.1)	181 (12.9)	140 (14.1)	150 (17.4)	5 (10.9)	0 (0)
2017	312 (8.3)	154 (10.8)	203 (13.6)	170 (11.0)	184 (13.1)	96 (9.7)	50 (5.8)	0 (0)	0 (0)
2018	346 (9.2)	334 (23.4)	135 (9.1)	117 (7.5)	161 (11.5)	133 (13.4)	199 (23.1)	0 (0)	0 (0)
2019	996 (26.5)	113 (7.9)	342 (23.0)	491 (31.7)	239 (17.1)	170 (17.1)	66 (7.7)	0 (0)	0 (0)
2020	195 (5.2)	88 (6.2)	9 (0.6)	15 (1.0)	7 (0.5)	2 (0.2)	22 (2.6)	0 (0)	274 (17.3)
2021	9 (0.2)	0 (0)	118 (7.9)	17 (1.1)	128 (9.1)	128 (12.9)	33 (3.8)	0 (0)	370 (23.3)
2022	412 (11.0)	0 (0)	197 (13.2)	40 (2.6)	171 (12.2)	145 (14.6)	111 (12.9)	0 (0)	942 (59.4)
<b>Total</b>	<b>3756 (100)</b>	<b>1430 (100)</b>	<b>1489 (100)</b>	<b>1550 (100)</b>	<b>407 (100)</b>	<b>993 (100)</b>	<b>862 (100)</b>	<b>46 (100)</b>	<b>1586 (100)</b>

**Abbreviation:** SARS-CoV-2 = severe acute respiratory syndrome coronavirus 2

\* Respiratory syncytial virus includes subtypes A and B.

† Human coronavirus includes 229E, OC43, NL63, or HKU1.