Supplementary information for:

Origin of the São Paulo Yellow Fever epidemic of 2017-2018 revealed through molecular epidemiological analysis of fatal cases

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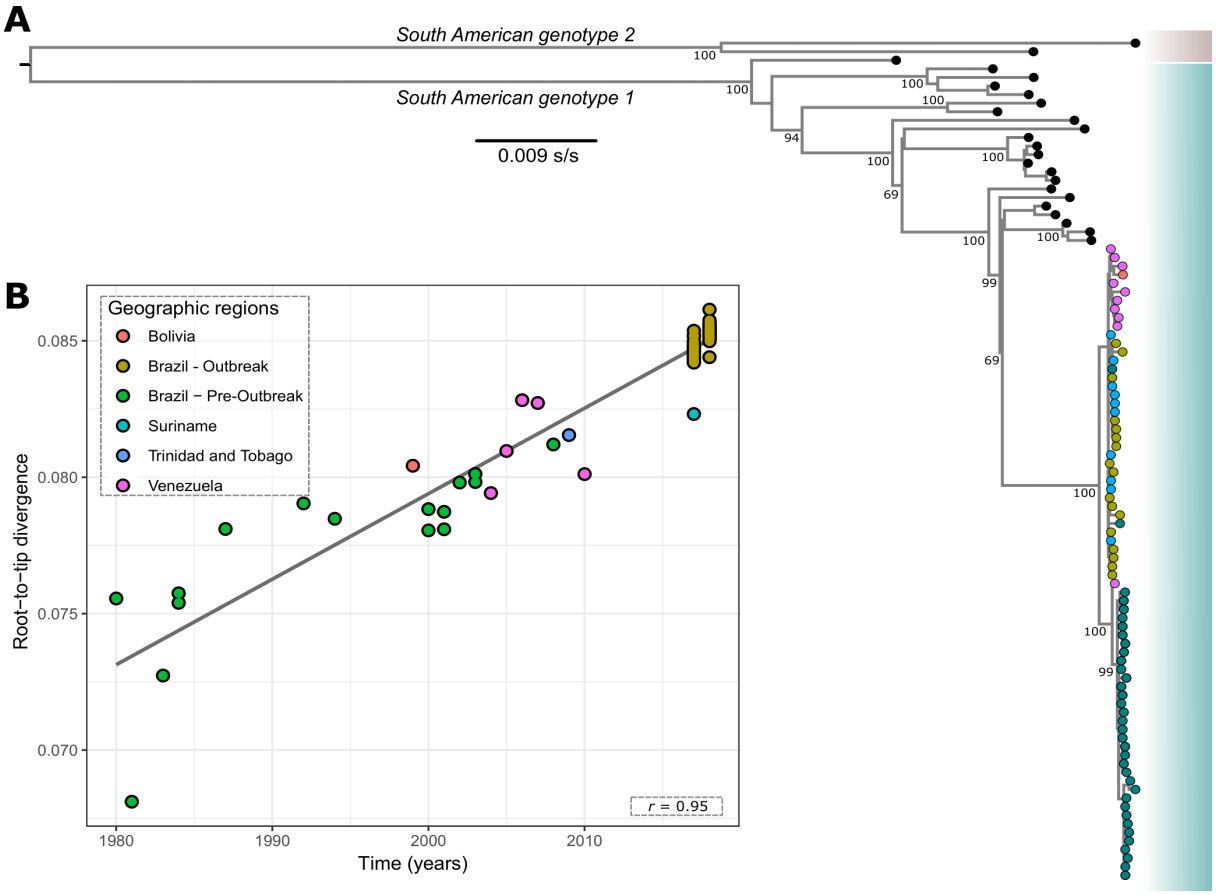
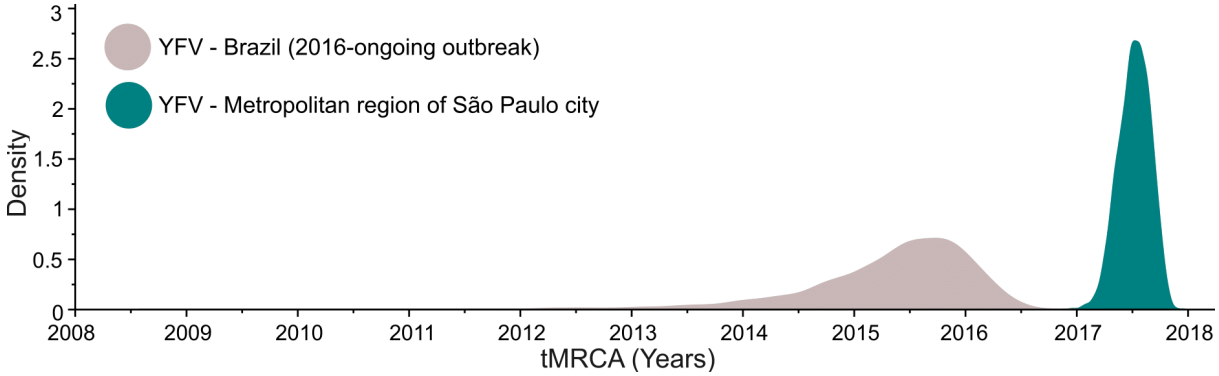
Contents:

Supplementary Figure 1. Maximum likelihood phylogenetic trees for YFV based on full-length genome sequences (n = 135). The tree is midpoint-rooted and nodes are labelled with bootstrap support values. The distinct colors represent distinct genotypes: (*i*) EAfr - East African; (*ii*) WAfr - West African; (*iii*) SA1 - South American I; (*iv*) SA2 - South American II.



Supplementary Figure 2. (A) Maximum Likelihood phylogenetic trees for South American (genotype I and II) YFV based on full-length genome sequences (n = 98). The tree is midpoint-rooted and nodes are labelled with bootstrap support values. The distinct colors represent distinct genotypes: (*i*) South American I and (*ii*) South American II. (B) A regression of root-to-tip genetic distance against time of sampling and showing a positive relationship (r = 0.95) indicative of a high rate of evolutionary change over the sampling period.



Supplementary Figure 3. Highest posterior probability density distribution for the time to the most recent common ancestor (tMRCA) estimated for the outbreak (green) and for the metropolitan region of São Paulo (MRSP) (gray).

Supplementary Table 1. Complete genomes sequences of human samples from the metropolitan region of São Paulo (MRSP).

Strain name	GenBank number	Tissue	Local of isolation	Date of isolation	Ct	Coverage
YFV003FIG	MK583147	Liver	Mairiporã	12 January 2018	16.23	19.8633
YFV004FIG	MK583148	Liver	Mairiporã	13 January 2018	15.39	283.649
YFV005FIG	MK583149	Liver	São Paulo	16 January 2018	10.45	627.765
YFV007FIG	MK583150	Liver	Itaquaquecetuba	15 January 2018	13.86	74.9691
YFV008FIG	MK583151	Liver	Mairiporã	15 January 2018	15.55	80.1772
YFV010FIG	MK583152	Liver	Ibiúna	16 January 2017	12.68	29.1631
YFV015FIG	MK583153	Liver	Mairiporã	20 January 2018	12.68	136.145
YFV016FIG	MK583154	Liver	São Paulo	21 January 2018	13.92	101.29
YFV018FIG	MK583155	Liver	Mairiporã	22 January 2018	15.47	34.1318
YFV020FIG	MK583156	Liver	Atibaia	23 January 2018	15.11	26.4692
YFV021FIG	MK583157	Liver	Guarulhos	23 January 2018	15.52	16.6804
YFV022FIG	MK583158	Liver	Mairiporã	23 January 2018	14.18	48.7968
YFV023FIG	MK583159	Liver	Atibaia	24 January 2018	9.1	984.74
YFV029FIG	MK583160	Liver	Cotia	29 January 2018	13.76	22.1379
YFV033FIG	MK583161	Liver	Itaquaquecetuba	24 January 2018	14.16	32.5673
YFV038FIG	MK583162	Liver	São Paulo	31 January 2018	9.6	653.547
YFV040FIG	MK583163	Liver	São Paulo	02 February 2018	15.14	35.9072
YFV041FIG	MK583164	Liver	Cotia	03 February 2018	12.86	246.849
YFV042FIG	MK583165	Liver	Mairiporã	04 February 2018	16.82	142.497
YFV043FIG	MK583166	Liver	São Paulo	06 February 2018	15.22	65.3013
YFV047FIG	MK583167	Liver	Guarulhos	11 February 2018	14.3	44.3845
YFV048FIG	MK583168	Liver	São Paulo	11 February 2018	16.74	41.6075
YFV052FIG	MK583169	Liver	Guarulhos	18 February 2018	18.16	29.569
YFV053FIG	MK583170	Liver	Guarulhos	18 February 2018	5.83	2143.13
YFV054FIG	MK583171	Liver	Guarulhos	18 February 2018	16.68	35.2501
YFV056FIG	MK583172	Liver	Guarulhos	19 February 2018	14.99	180.059
YFV060FIG	MK583173	Liver	Guarulhos	23 February 2018	14.5	50.6066
YFV061FIG	MK583174	Liver	Arujá	24 February 2018	15.54	30.6265
YFV065FIG	MK583175	Liver	Itaquaquecetuba	27 February 2018	12.68	29.4161
YFV066FIG	MK583176	Liver	Piedade	27 February 2018	14.54	28.8237
YFV070FIG	MK583177	Liver	Guarulhos	04 March 2018	13.82	82.4984
YFV072FIG	MK583178	Liver	Itariri	10 March 2018	13.4	68.4612
YFV074FIG	MK583179	Liver	Ibiúna	11 March 2018	13.32	352.811
YFV076FIG	MK583180	Liver	Guarulhos	14 March 2018	15.13	105.489
YFV080FIG	MK583181	Liver	São Lourenço da Serra	27 March 2018	15.22	57.1338
YFV081FIG	MK583182	Liver	Guarulhos	14 March 2018	18.3	21.0936

Supplementary Table 2. Complete YFV genomes sequences used in the phylogenetic analysis.

Strain name	GenBank number	Location	Year	Genotype
BeAn754036	KY861728	Brazil - Rio Grande do Sul	2008	South American I
8582H	U54798	Côte d'Ivoire	1982	West African
17DDBrazil	DQ100292	Brazil	1975	West African
Uganda48a	AY968065	Uganda	1948	East African
Couma	DQ235229	Ethiopia	1961	East African
Uganda2010	JN620362	Uganda	2010	East African
Angola71	AY968064	Angola	1971	East African
CIC1	KX010994	China	2016	East African
Ogbomosho	KU978763	Nigeria	1946	West African
YFV112	MF465805	Brazil - Minas Gerais	2017	South American I
ES505	KY885001	Brazil - Espírito Santo	2017	South American I
M211	MH018096	Brazil - Minas Gerais	2017	South American I
M210	MH018095	Brazil - Minas Gerais	2017	South American I
M138	MH018093	Brazil - Minas Gerais	2017	South American I
M123	MH018092	Brazil - Minas Gerais	2017	South American I
M68	MH018080	Brazil - Minas Gerais	2017	South American I
M58	MH018079	Brazil - Minas Gerais	2017	South American I
M51	MH018078	Brazil - Minas Gerais	2017	South American I
3495	MF170981	Brazil - Espírito Santo	2017	South American I
2563	MF170980	Brazil - Espírito Santo	2017	South American I
3472	MF170979	Brazil - Espírito Santo	2017	South American I
2841	MF170978	Brazil - Espírito Santo	2017	South American I
1122	MF170977	Brazil - Espírito Santo	2017	South American I
282	MF170976	Brazil - Espírito Santo	2017	South American I
1555	MF170975	Brazil - Espírito Santo	2017	South American I
3919	MF170973	Brazil - Espírito Santo	2017	South American I
2992	MF170972	Brazil - Espírito Santo	2017	South American I
m6590PNH	MF170971	Brazil - Minas Gerais	2017	South American I
es2487	MF170970	Brazil - Espírito Santo	2017	South American I
rj1930	MF170969	Brazil - Espírito Santo	2017	South American I
3925	MF170968	Brazil - Espírito Santo	2017	South American I
RJ104	MF538786	Brazil - Rio de Janeiro	2017	South American I
RJ97	MF538785	Brazil - Rio de Janeiro	2017	South American I
H196	MF538784	Brazil - Rio de Janeiro	2017	South American I
H191	MF538783	Brazil - Rio de Janeiro	2017	South American I
H190	MF538782	Brazil - Rio de Janeiro	2017	South American I
RJ96	MF423378	Brazil - Rio de Janeiro	2017	South American I
RJ95	MF423377	Brazil - Rio de Janeiro	2017	South American I
RJ94	MF423376	Brazil - Rio de Janeiro	2017	South American I
RJ87	MF423375	Brazil - Rio de Janeiro	2017	South American I
PA196	MF423374	Brazil - Espírito Santo	2017	South American I
PA193	MF423373	Brazil - Espírito Santo	2017	South American I

H199	MF434851	Brazil - Rio de Janeiro	2017	South American I
ES504	KY885000	Brazil - Espírito Santo	2017	South American I
2829	MF170974	Brazil - Espírito Santo	2017	South American I
M105	MH018090	Brazil - Minas Gerais	2017	South American I
M218	MH018099	Brazil - Bahia	2017	South American I
BeH655417	JF912190	Brazil - Roraima	2002	South American I
2A	KM388817	Venezuela	2004	South American I
6A	KM388814	Venezuela	2005	South American I
10A	KM388816	Venezuela	2010	South American I
9A	KM388815	Venezuela	2007	South American I
8A	KM388818	Venezuela	2006	South American I
1	MG969501	Brazil - Minas Gerais	2001	South American I
BeAR646536	JF912189	Brazil - Rio Grande do Sul	2001	South American I
BeH622493	JF912188	Brazil - Goiás	2000	South American I
BeH622205	JF912187	Brazil - Goiás	2000	South American I
M225	MH018100	Brazil - Minas Gerais	2003	South American I
TVP11767	HM582851	Trinidad and Tobago	2009	South American I
M226	MH018101	Brazil - Minas Gerais	2003	South American I
Suriname2017	MF347613	Suriname	2017	South American I
BeAR378600	JF912179	Brazil - Goiás	1980	South American I
BeH463676	JF912184	Brazil - Pará	1987	South American I
BeH423602	JF912183	Brazil - Pará	1984	South American I
BeH394880	JF912180	Brazil - Pará	1981	South American I
BeAR513008	JF912185	Brazil - Mato Grosso do Sul	1992	South American I
BeH422973	JF912182	Brazil - Pará	1984	South American I
BeH526722	JF912186	Brazil - Minas Gerais	1994	South American I
Bolivia88	MF004382	Bolivia	1999	South American II
BeH413820	JF912181	Brazil - Rondônia	1983	South American II
JoseCachatra	KU978765	Guinea-Bissau	1965	West African
Asibi	MF405338	Ghana	1927	West African
M185D160	KU978764	Sudan	1941	West African
ArD181564	JX898880	Senegal	2005	West African
ArD181250	JX898878	Senegal	2005	West African
ArD181464	JX898877	Senegal	2005	West African
DakArAmt7	JX898869	Côte d'Ivoire	1973	West African
case1	GQ379162	Peru	2007	West African
ArD156468	JX898876	Senegal	2001	West African
case2	GQ379163	Peru	2007	West African
Ap7M	MF926243	France	2015	West African
YFVEHI	MF289572	Singapore	2017	West African
17D	JX949181	United States of America	2012	West African
ArD121040	JX898870	Senegal	1996	West African
HD117294	JX898868	Senegal	1995	West African
YFAVD279193F	DQ118157	Spain	2004	West African
ArD149815	JX898875	Senegal	2000	West African

ArD149194	JX898874	Senegal	2000	West African
ArD149214	JX898873	Senegal	2000	West African
ArD114972	JX898872	Senegal	1995	West African
ArD114896	JX898871	Senegal	1995	West African
BJ01	KY495641	China	2016	East African
CNYF01R	KX268355	China	2016	East African
CIC4	KX027336	China	2016	East African
CIC2	KX010995	China	2016	East African
CNFY0321	KY873607	China	2016	East African
FJYF03	KY587416	China	2016	East African
CNYF01	KU921608	China	2016	East African
CIC3	KX010996	China	2016	East African
YFV003FIG	MK583147	Brazil - São Paulo	2018	South American I
YFV004FIG	MK583148	Brazil - São Paulo	2018	South American I
YFV005FIG	MK583149	Brazil - São Paulo	2018	South American I
YFV007FIG	MK583150	Brazil - São Paulo	2018	South American I
YFV008FIG	MK583151	Brazil - São Paulo	2018	South American I
YFV010FIG	MK583152	Brazil - São Paulo	2018	South American I
YFV015FIG	MK583153	Brazil - São Paulo	2018	South American I
YFV016FIG	MK583154	Brazil - São Paulo	2018	South American I
YFV018FIG	MK583155	Brazil - São Paulo	2018	South American I
YFV020FIG	MK583156	Brazil - São Paulo	2018	South American I
YFV021FIG	MK583157	Brazil - São Paulo	2018	South American I
YFV022FIG	MK583158	Brazil - São Paulo	2018	South American I
YFV023FIG	MK583159	Brazil - São Paulo	2018	South American I
YFV029FIG	MK583160	Brazil - São Paulo	2018	South American I
YFV033FIG	MK583161	Brazil - São Paulo	2018	South American I
YFV038FIG	MK583162	Brazil - São Paulo	2018	South American I
YFV040FIG	MK583163	Brazil - São Paulo	2018	South American I
YFV041FIG	MK583164	Brazil - São Paulo	2018	South American I
YFV042FIG	MK583165	Brazil - São Paulo	2018	South American I
YFV043FIG	MK583166	Brazil - São Paulo	2018	South American I
YFV047FIG	MK583167	Brazil - São Paulo	2018	South American I
YFV048FIG	MK583168	Brazil - São Paulo	2018	South American I
YFV052FIG	MK583169	Brazil - São Paulo	2018	South American I
YFV053FIG	MK583170	Brazil - São Paulo	2018	South American I
YFV054FIG	MK583171	Brazil - São Paulo	2018	South American I
YFV056FIG	MK583172	Brazil - São Paulo	2018	South American I
YFV060FIG	MK583173	Brazil - São Paulo	2018	South American I
YFV061FIG	MK583174	Brazil - São Paulo	2018	South American I
YFV065FIG	MK583175	Brazil - São Paulo	2018	South American I
YFV066FIG	MK583176	Brazil - São Paulo	2018	South American I
YFV070FIG	MK583177	Brazil - São Paulo	2018	South American I
YFV072FIG	MK583178	Brazil - São Paulo	2018	South American I
YFV074FIG	MK583179	Brazil - São Paulo	2018	South American I
YFV076FIG	MK583180	Brazil - São Paulo	2018	South American I

YFV080FIG	MK583181	Brazil - São Paulo	2018	South American I
YFV081FIG	MK583182	Brazil - São Paulo	2018	South American I

Supplementary Table 3. Complete genomes sequences used in the phylogeographic and phylodynamics analysis.

Strain name	GenBank number	Local of isolation (Brazilian state, City)	Date of isolation	Isolation source	Host	Outbreak clade
YFV112	MF465805	Minas Gerais, Januária	17-Jan-17	Urine	*Homo sapiens*	Clade I
ES505	KY885001	Espírito Santo, Domingos Martins	22-Feb-17	Serum	*Alouatta clamitans*	Clade I
PA196	MF423374	Espírito Santo, Domingos Martins	23-Feb-17	Mosquitoes pool	*Haemagogus janthinomys*	Clade I
PA193	MF423373	Espírito Santo, Domingos Martins	21-Feb-17	Mosquitoes pool	*Haemagogus leucocelaenus*	Clade I
H199	MF434851	Rio de Janeiro, Casimiro de Abreu	25-Apr-17	Serum	*Homo sapiens*	Clade I
ES504	KY885000	Espírito Santo, Domingos Martins	20-Feb-17	Serum	*Alouatta clamitans*	Clade I
2829	MF170974	Espírito Santo, Cariacica	29-Mar-17	Serum	*Homo sapiens*	Clade I
M105	MH018090	Minas Gerais, Caratinga	12-Jan-17	Liver	*Homo sapiens*	Clade I
M218	MH018099	Bahia, Cordeiros	10-Mar-17	NA	Non-human primate	Clade I
M211	MH018096	Minas Gerais, Jose Raydan	13-Jan-17	Liver	*Alouatta sp.*	Clade I
M210	MH018095	Minas Gerais, Sabinopolis	19-Jan-17	Liver	*Callithrix sp.*	Clade I
M138	MH018093	Minas Gerais, Santa Barbara Leste	20-Jan-17	Serum	*Homo sapiens*	Clade I
M123	MH018092	Minas Gerais, Itambacuri	27-Jan-17	Serum	*Homo sapiens*	Clade I
M68	MH018080	Minas Gerais, Ladainha	28-Jan-17	Liver	*Homo sapiens*	Clade I
M58	MH018079	Minas Gerais, Itambacuri	28-Jan-17	Liver	*Homo sapiens*	Clade I
M51	MH018078	Minas Gerais, Novo Cruzeiro	18-Jan-17	Liver	*Homo sapiens*	Clade I
3495	MF170981	Espírito Santo, Santa Leopoldina	05-Apr-17	Serum	*Homo sapiens*	Clade I
2563	MF170980	Espírito Santo, Alfredo Chaves	23-Mar-17	Serum	*Homo sapiens*	Clade I
3472	MF170979	Espírito Santo, Santa Maria de Jetiba	06-Apr-17	Serum	*Homo sapiens*	Clade I
2841	MF170978	Espírito Santo, Santa Maria de Jetiba	28-Mar-17	Serum	*Homo sapiens*	Clade I
1122	MF170977	Espírito Santo, Conceicao do Castelo	10-Feb-17	Serum	*Homo sapiens*	Clade I
282	MF170976	Espírito Santo, Laranja da Terra	25-Jan-17	Serum	*Homo sapiens*	Clade I
1555	MF170975	Espírito Santo, Brejetuba	03-Mar-17	Serum	*Homo sapiens*	Clade I
3919	MF170973	Brazil: Espírito Santo, Domingos Martins	10-Apr-17	Serum	*Homo sapiens*	Clade I
2992	MF170972	Espírito Santo, Cariacica	31-Mar-17	Serum	*Homo sapiens*	Clade I
es2487	MF170970	Espírito Santo, Domingos Martins	21-Mar-17	Serum	*Homo sapiens*	Clade I
rj1930	MF170969	Espírito Santo, Casimiro de Abreu	18-Mar-17	Serum	*Homo sapiens*	Clade I

3925	MF170968	Espírito Santo, Marechal Floriano	13-Apr-17	Serum	*Homo sapiens*	Clade I
RJ104	MF538786	Rio de Janeiro, Guapimirim	05-Jun-17	Serum	Marmoset	Clade I
RJ97	MF538785	Rio de Janeiro, Petropolis	21-Apr-17	Serum	Marmoset	Clade I
H196	MF538784	Rio de Janeiro, Porciuncula	26-Feb-17	Serum	*Homo sapiens*	Clade I
H191	MF538783	Rio de Janeiro, Casimiro de Abreu	18-Mar-17	Serum	*Homo sapiens*	Clade I
H190	MF538782	Rio de Janeiro, São Fidelis	16-Mar-17	Serum	*Homo sapiens*	Clade I
RJ96	MF423378	Rio de Janeiro, Macaé	19-Apr-17	Serum	*Alouatta guariba clamitans*	Clade I
RJ95	MF423377	Rio de Janeiro, Carmo	19-Apr-17	Serum	*Alouatta guariba clamitans*	Clade I
RJ94	MF423376	Rio de Janeiro, Macaé	13-Apr-17	Serum	*Alouatta guariba clamitans*	Clade I
RJ87	MF423375	Rio de Janeiro, Macaé	04-Apr-17	Serum	*Alouatta guariba clamitans*	Clade I
YFV048FIG	MK583168	São Paulo, São Paulo	11-Feb-18	Liver	*Homo sapiens*	Clade I
YFV016FIG	MK583154	São Paulo, São Paulo	21-Jan-18	Liver	*Homo sapiens*	Clade I
m6590PNH	MF170971	Minas Gerais, São Roque de Minas	30-Jan-17	Serum	New World monkey	Clade II
YFV003FIG	MK583147	São Paulo, Mairiporã	12-Jan-18	Liver	*Homo sapiens*	Clade II
YFV004FIG	MK583148	São Paulo, Mairiporã	13-Jan-18	Liver	*Homo sapiens*	Clade II
YFV005FIG	MK583149	São Paulo, São Paulo	16-Jan-18	Liver	*Homo sapiens*	Clade II
YFV007FIG	MK583150	São Paulo, Itaquaquecetuba	15-Jan-18	Liver	*Homo sapiens*	Clade II
YFV008FIG	MK583151	São Paulo, Mairiporã	15-Jan-18	Liver	*Homo sapiens*	Clade II
YFV010FIG	MK583152	São Paulo, Ibiúna	16-Jan-17	Liver	*Homo sapiens*	Clade II
YFV015FIG	MK583153	São Paulo, Mairiporã	20-Jan-18	Liver	*Homo sapiens*	Clade II
YFV018FIG	MK583155	São Paulo, Mairiporã	22-Jan-18	Liver	*Homo sapiens*	Clade II
YFV020FIG	MK583156	São Paulo, Atibaia	23-Jan-18	Liver	*Homo sapiens*	Clade II
YFV021FIG	MK583157	São Paulo, Guarulhos	23-Jan-18	Liver	*Homo sapiens*	Clade II
YFV022FIG	MK583158	São Paulo, Mairiporã	23-Jan-18	Liver	*Homo sapiens*	Clade II
YFV023FIG	MK583159	São Paulo, Atibaia	24-Jan-18	Liver	*Homo sapiens*	Clade II
YFV029FIG	MK583160	São Paulo, Cotia	29-Jan-18	Liver	*Homo sapiens*	Clade II
YFV033FIG	MK583161	São Paulo, Itaquaquecetuba	24-Jan-18	Liver	*Homo sapiens*	Clade II
YFV038FIG	MK583162	São Paulo, São Paulo	31-Jan-18	Liver	*Homo sapiens*	Clade II

YFV040FIG	MK583163	São Paulo, São Paulo	02-Feb-18	Liver	*Homo sapiens*	Clade II
YFV041FIG	MK583164	São Paulo, Cotia	03-Feb-18	Liver	*Homo sapiens*	Clade II
YFV042FIG	MK583165	São Paulo, Mairiporã	04-Feb-18	Liver	*Homo sapiens*	Clade II
YFV043FIG	MK583166	São Paulo, São Paulo	06-Feb-18	Liver	*Homo sapiens*	Clade II
YFV047FIG	MK583167	São Paulo, Guarulhos	11-Feb-18	Liver	*Homo sapiens*	Clade II
YFV052FIG	MK583169	São Paulo, Guarulhos	18-Feb-18	Liver	*Homo sapiens*	Clade II
YFV053FIG	MK583170	São Paulo, Guarulhos	18-Feb-18	Liver	*Homo sapiens*	Clade II
YFV054FIG	MK583171	São Paulo, Guarulhos	18-Feb-18	Liver	*Homo sapiens*	Clade II
YFV056FIG	MK583172	São Paulo, Guarulhos	19-Feb-18	Liver	*Homo sapiens*	Clade II
YFV060FIG	MK583173	São Paulo, Guarulhos	23-Feb-18	Liver	*Homo sapiens*	Clade II
YFV061FIG	MK583174	São Paulo, Arujá	24-Feb-18	Liver	*Homo sapiens*	Clade II
YFV065FIG	MK583175	São Paulo, Itaquaquecetuba	27-Feb-18	Liver	*Homo sapiens*	Clade II
YFV066FIG	MK583176	São Paulo, Piedade	27-Feb-18	Liver	*Homo sapiens*	Clade II
YFV070FIG	MK583177	São Paulo, Guarulhos	04-Mar-18	Liver	*Homo sapiens*	Clade II
YFV072FIG	MK583178	São Paulo, Itariri	10-Mar-18	Liver	*Homo sapiens*	Clade II
YFV074FIG	MK583179	São Paulo, Ibiúna	11-Mar-18	Liver	*Homo sapiens*	Clade II
YFV076FIG	MK583180	São Paulo, Guarulhos	14-Mar-18	Liver	*Homo sapiens*	Clade II
YFV080FIG	MK583181	São Paulo, São Lourenço da Serra	27-Mar-18	Liver	*Homo sapiens*	Clade II
YFV081FIG	MK583182	São Paulo, Guarulhos	14-Mar-18	Liver	*Homo sapiens*	Clade II

Supplementary Table 4. Comparison among continuous spatial diffusion models for Brazilian sequences from 2017-2018.

	Brazilian outbreak sequences (2017-2018)		
Spatial diffusion model	**Continuous**		
Demographic model	**PS**	**SS**	**SS Log BF**
Constant	-16570.65	-16570.97	0.0
Exponential	-16565.27	-16565.12	5.85
Logistic	**-16562.77**	**-16562.85**	**8.12**

PS: Path sampling; SS: Stepping stone.

Supplementary Table 5. Comparison among continuous diffusion models for Brazilian sequences from 2017-2018.

Continuous diffusion models	**PS**	**SS**	**Marginal LnL (stdev)**	**Coefficient of variation (95% HPD)**	**Correlation (95% HPD)**	**SS Log** BF	**Dispersal rate (km/day) (95% HPD)**
BD	-16562.77	-16562.85	-16286.3 (10.52)	1.11 (0.6, 1.66)	0.56 (0.38, 0.74)	0.0	4.00 (2.7, 5.33)
Cauchy RRW model	-16551.53	-16551.43	-16231.44 (11.14)	0.77 (0.37, 1.21)	0.35 (0.07, 0.62)	11.42	3.21 (2.2, 4.29)
Gamma RRW model	-16551.58	-16551.94	-16234.35 (11.81)	0.79 (0.39, 1.2)	0.26 (-0.02, 0.55)	10.91	3.12 (2.13, 4.2)
Lognormal RRW model	**-16546.49**	**-16546.95**	**-16232.95 (11.41)**	**0.84 (0.44, 1.27)**	**0.36 (0.09, 0.62)**	**15.9**	**3.3 (2.25, 4.37)**

BD: Brownian diffusion process; RRWs: Relaxed random walks; PS: Path sampling; SS: Stepping stone. The log Bayes factor (BF) is the difference of the log ML between alternative (H1) and null (H0) models. Log BFs >3 indicates that model H1 is more strongly supported by the data than model H0. $0 < BF < 2$ is not worth more than a bare mention, $2 < BF < 6$ is positive evidence, $6 < BF < 10$ is strong support, and $BF > 10$ is decisive.

Supplementary Table 6. Total number of sampled cases (n = 81) and qRT-PCR positive YFV (n = 67) in the sampled cities of São Paulo, Brazil (2017-2018).

		YFV cases (n = 67)	
City	**Cases (n = 81)**	**n**	**%**
Arujá	1	1	100.0
Atibaia	2	2	100.0
Carapicuíba	1	1	100.0
Cotia	4	4	100.0
Embu das Artes	1	1	100.0
Ferraz de Vasconcelos	1	0	0.0
Franco da Rocha	2	1	50.0
Guarulhos	17	16	94.1
Ibiúna	3	3	100.0
Itaquaquecetuba	4	4	100.0
Itariri	1	1	100.0
Mairiporã	12	11	91.7
Peruíbe	1	1	100.0
Piedade	1	1	100.0
São Bento do Sapucaí	1	1	100.0
São Lourenço da Serra	1	1	100.0
São Paulo	28	18	64.3
TOTAL	81	67	82.7