

## SUPPLEMENTARY MATERIAL

Table S1. Raw data.

Rank	Country	Total cases May 22	Total deaths May 22	Total cases/1M May 22	Total death/1M May 22	Population	Domestic flight mi pass May 22	Total passengers 2018	Sum with domestic	Inpassengers	Incases	Inpassengers	Indeathcases 1M	Incases 1M	Number of terrestrial frontiers	In no deaths
1	USA	1645646	97663	4974.8087	295	330795837	587	796877823	1383877823	21.0482	14.3136	21.0482	5.6870	8.5121	3	11.4893
2	Russia	335882	3388	2301.6971	23	145927974	50	100491546	150491546	18.8294	12.7245	18.8294	3.1355	7.7414	4	8.1280
3	Brazil	332382	21116	1564.9060	99	212397420	72	93266806	165266806	18.9231	12.7140	18.9231	4.5951	7.3556	5	9.9578
4	Spain	281904	28628	6029.6579	612	46752901	42	200814594	242814594	19.3078	12.5493	19.3078	6.4167	8.7044	4	10.2621
5	UK	254195	36393	3746.5292	536	67848130	42	251370641	293370641	19.4969	12.4459	19.4969	6.2841	8.2286	3	10.5021
6	Italy	228658	32616	3781.2863	539	60470956	0	146984636	146984636	18.8058	12.3400	18.8058	6.2897	8.2378	0	10.3926
7	France	182219	28289	2792.2689	433	65258400	0	140165675	140165675	18.7583	12.1130	18.7583	6.0707	7.9346	0	10.2502
8	Germany	179713	8352	2145.6789	100	83755775	0	171126916	171126916	18.9579	12.0991	18.9579	4.6052	7.6712	3	9.0303
10	Iran	133521	7359	1591.9162	88	83874391	0	19403070	19403070	16.7809	11.8020	16.7809	4.4773	7.3727	0	8.9037
11	India	126308	3754	91.6251	3	1378529934	116	176719682	292719682	19.4947	11.7465	19.4947	1.0986	4.5177	4	8.2306
12	Peru	111698	3244	3392.9185	99	32920920	0	19984490	19984490	16.8105	11.6236	16.8105	4.5951	8.1294	0	8.0846
13	China	82971	4634	57.6458	3	1439323776	0	668024219	668024219	20.3198	11.3262	20.3198	1.0986	4.0543	0	8.4412
15	Saudi Arabia	67719	364	1948.5655	10	34753259	0	60170002	60170002	17.9127	11.1231	17.9127	2.3026	7.5748	4	5.8972
16	Mexico	62527	6989	485.5144	54	128785048	0	88900965	88900965	18.3030	11.0434	18.3030	3.9890	6.1852	3	8.8521
17	Chile	61857	630	3238.8445	33	19098478	0	22174381	22174381	16.9144	11.0326	16.9144	3.4965	8.0830	4	6.4457
19	Pakistan	52437	1101	237.9134	5	220403741	0	19129335	19129335	16.7667	10.8674	16.7667	1.6094	5.4719	4	7.0040
20	Netherlands	44888	5788	2620.2934	338	17130906	0	51585542	51585542	17.7588	10.7119	17.7588	5.8230	7.8710	6	8.6635
21	Qatar	40481	19	14077.5127	7	2875579	0	9733992	9733992	16.0911	10.6086	16.0911	1.9459	9.5523	0	2.9444
22	Ecuador	35828	3056	2034.1607	174	17613161	0	7638667	7638667	15.8487	10.4865	15.8487	5.1591	7.6178	4	8.0249
23	Belarus	35244	194	3729.6643	21	9449644	0	2207182	2207182	14.6072	10.4701	14.6072	3.0445	8.2241	0	5.2679
24	Sweden	32809	3925	3250.8160	389	10092543	0	34543554	34543554	17.3577	10.3985	17.3577	5.9636	8.0867	2	8.2751
25	Bangladesh	32078	452	194.9900	3	164510959	0	11558845	11558845	16.2630	10.3759	16.2630	1.0986	5.2729	3	6.1137
26	Singapore	31068	23	5314.9576	4	5845390	0	49196273	49196273	17.7113	10.3439	17.7113	1.3863	8.5783	5	3.1355
27	Switzerland	30725	1904	3552.9148	220	8647829	0	49110761	49110761	17.7096	10.3328	17.7096	5.3936	8.1755	2	7.5517
30	Ireland	24506	1592	4969.0252	323	4931752	0	33808200	33808200	17.3362	10.1067	17.3362	5.7777	8.5110	0	7.3727
31	Indonesia	21745	1351	79.5913	5	273208135	103	138807314	241807314	19.3037	9.9871	19.3037	1.6094	4.3769	0	7.2086
32	Poland	20838	990	550.5289	26	37850876	0	36794934	36794934	17.4209	9.9445	17.4209	3.2581	6.3109	2	6.8977
34	Kuwait	20464	148	4799.7696	35	4263538	0	12181830	12181830	16.3155	9.9264	16.3155	3.5553	8.4763	4	4.9972
35	South Africa	20125	397	339.7983	7	59226304	0	25253344	25253344	17.0445	9.9097	17.0445	1.9459	5.8284	2	5.9839
36	Colombia	19131	682	376.4188	13	50823711	0	33879040	33879040	17.3383	9.8591	17.3383	2.5649	5.9307	2	6.5250
37	Romania	17857	117	927.6110	61	19250526	0	19733335	19733335	16.7978	9.7902	16.7978	4.1109	6.8326	0	4.7622
38	Israel	16712	279	1816.9977	30	9197590	0	21588660	21588660	16.8877	9.7239	16.8877	3.4012	7.5049	4	5.6312
39	Japan	16513	796	130.5211	6	126515903	94	187233922	281233922	19.4547	9.7119	19.4547	1.7918	4.8715	5	6.6796
40	Austria	16486	639	1831.5891	71	9000927	0	24105166	24105166	16.9979	9.7103	16.9979	4.2627	7.5129	4	6.4599
41	Egypt	15786	707	154.5902	7	102115130	0	23996516	23996516	16.9934	9.6669	16.9934	1.9459	5.0408	3	6.5610
42	Dominican Republic	13989	456	1290.9654	42	10836077	0	13388987	13388987	16.4099	9.5460	16.4099	3.7377	7.1631	5	6.1225
43	Philippines	13777	863	125.9095	8	109419831	0	51972645	51972645	17.7662	9.5308	17.7662	2.0794	4.8356	7	6.7604
45	S. Korea	11165	266	217.7916	5	51264600	0	102304402	102304402	18.4435	9.3205	18.4435	1.6094	5.3835	4	5.5835
46	Serbia	11024	237	1261.1917	27	8740939	0	6416125	6416125	15.6743	9.3078	15.6743	3.2958	7.1398	8	5.4681
47	Argentina	10649	433	235.8538	10	45150850	0	26788122	26788122	17.1035	9.2732	17.1035	2.3026	5.4632	5	6.0707
48	Panama	10267	295	2383.7014	68	4307167	0	6284299	6284299	15.6536	9.2367	15.6536	4.2195	7.7764	4	5.6870
49	Afghanistan	9998	216	257.5015	6	38826954	0	2103344	2103344	14.5590	9.2101	14.5590	1.7918	5.5510	3	5.3753
50	Czechia	8813	312	823.1136	29	10706906	0	16615189	16615189	16.6258	9.0840	16.6258	3.3673	6.7131	5	5.7430
51	Bahrain	8774	12	5178.4879	7	1694317	0	4968478	4968478	15.4186	9.0795	15.4186	1.9459	8.5523	0	2.4849

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52	Norway	8332	235	1538.2116	43	5416680	0	35237424	35237424	17.3776	9.0279	17.3776	3.7612	7.3384	4	5.4596
14	Canada	8248	625	218.7428	166	37706381	0	97545561	97545561	18.3958	9.0177	18.3958	5.1120	5.3879	4	6.4378
53	Kazakhstan	7919	35	422.3007	2	18752041	0	8154588	8154588	15.9141	8.9770	15.9141	0.6931	6.0457	0	3.5553
54	Algeria	7918	582	180.9355	13	43761439	0	9998802	9998802	16.1180	8.9769	16.1180	2.5649	5.1981	3	6.3665
55	Morocco	7375	197	200.0676	5	36862538	0	18785269	18785269	16.7486	8.9059	16.7486	1.6094	5.2987	5	5.2832
56	Nigeria	7261	221	35.3261	1	205542168	0	7443155	7443155	15.8228	8.8903	15.8228	0	3.5646	6	5.3982
57	Oman	7257	34	1425.3469	7	5091392	0	9491502	9491502	16.0659	8.8897	16.0659	1.9459	7.2622	4	3.5264
58	Malaysia	7185	115	222.3063	4	32320265	0	65683220	65683220	18.0004	8.8798	18.0004	1.3863	5.4041	0	4.7449
59	Australia	7111	102	279.2192	4	25467448	57	97486223	154486223	18.8556	8.8694	18.8556	1.3863	5.6320	2	4.6250
60	Moldova	6847	237	1696.9349	59	4034922	0	2622417	2622417	14.7796	8.8316	14.7796	4.0775	7.4366	2	5.4681
61	Ghana	6617	31	213.4618	1	30998526	0	2366070	2366070	14.6767	8.7974	14.6767	0	5.3635	8	3.4340
62	Finland	6568	306	1185.5977	55	5539822	0	15225481	15225481	16.5385	8.7900	16.5385	4.0073	7.0780	2	5.7236
63	Armenia	6302	77	2127.1389	26	2962665	0	2835430	2835430	14.8577	8.7486	14.8577	3.2581	7.6625	5	4.3438
18	Belgium	5681	9237	490.4056	797	11584289	0	29052869	29052869	17.1846	8.6449	17.1846	6.6809	6.1952	5	9.1310
64	Bolivia	5579	230	478.6627	20	11655388	0	5392683	5392683	15.5006	8.6268	15.5006	2.9957	6.1710	0	5.4381
66	Luxembourg	3981	109	6371.2718	174	624836	0	3978051	3978051	15.1963	8.2893	15.1963	5.1591	8.7596	6	4.6913
67	Iraq	3964	147	98.8082	4	40118148	0	7382934	7382934	15.8147	8.2850	15.8147	1.3863	4.5932	4	4.9904
68	Azerbaijan	3855	46	380.5796	5	10129286	0	3893894	3893894	15.1749	8.2571	15.1749	1.6094	5.9417	2	3.8286
69	Hungary	3713	482	384.2549	50	9662856	0	15253317	15253317	16.5403	8.2196	16.5403	3.9120	5.9513	0	6.1779
70	Honduras	3477	167	351.6751	17	9886968	0	1990942	1990942	14.5041	8.1539	14.5041	2.8332	5.8627	7	5.1180
71	Sudan	3378	137	77.2461	3	43730378	0	3488252	3488252	15.0649	8.1250	15.0649	1.0986	4.3470	1	4.9200
74	Uzbekistan	3036	13	90.8567	0.4	33415264	0	4086419	4086419	15.2232	8.0183	15.2232	0	4.5093	2	2.5649
75	Senegal	2976	34	178.2897	2	16691939	0	2427899	2427899	14.7025	7.9983	14.7025	0.6931	5.1834	8	3.5264
76	Greece	2874	169	275.5990	16	10428193	0	47516575	47516575	17.6766	7.9635	17.6766	2.7726	5.6189	2	5.1299
77	Guatemala	2743	51	153.4289	3	17877985	0	3118559	3118559	14.9529	7.9168	14.9529	1.0986	5.0332	0	3.9318
78	Tajikistan	2551	44	268.1628	5	9512877	0	2064336	2064336	14.5403	7.8442	14.5403	1.6094	5.5916	0	3.7842
79	Bulgaria	2408	126	346.2928	18	6953654	0	10332473	10332473	16.1508	7.7866	16.1508	2.8904	5.8473	5	4.8363
80	Bosnia and Herzegovina	2391	141	728.3272	43	3282865	0	1681853	1681853	14.3354	7.7795	14.3354	3.7612	6.5908	3	4.9488
83	Croatia	2243	99	546.0336	24	4107806	0	9264070	9264070	16.0417	7.7156	16.0417	3.1781	6.3027	2	4.5951
33	Ukraine	2058	605	47.0291	14	43760129	0	16147113	16147113	16.5973	7.6295	16.5973	2.6391	3.8508	6	6.4052
86	Cuba	1916	81	169.1484	7	11327329	0	8912003	8912003	16.0029	7.5580	16.0029	1.9459	5.1308	5	4.3944
87	Estonia	1821	64	1372.8456	48	1326442	0	2609003	2609003	14.7745	7.5071	14.7745	3.8712	7.2246	3	4.1589
88	El Salvador	1819	33	280.5916	5	6482732	0	2466987	2466987	14.7185	7.5060	14.7185	1.6094	5.6369	2	3.4965
89	Iceland	1803	10	5287.2970	29	341006	0	7704538	7704538	15.8573	7.4972	15.8573	3.3673	8.5731	2	2.3026
91	Lithuania	1616	63	592.8211	23	2725949	0	5775709	5775709	15.5692	7.3877	15.5692	3.1355	6.3849	0	4.1431
9	Turkey	1545	4276	18.3405	51	84239988	40	95792929	135792929	18.7266	7.3428	18.7266	3.9318	2.9091	0	8.3608
95	New Zealand	1504	21	312.1619	4	4818013	0	24891447	24891447	17.0300	7.3159	17.0300	1.3863	5.7435	3	3.0445
94	Slovakia	1504	28	275.4898	5	5459368	0	2847678	2847678	14.8620	7.3159	14.8620	1.6094	5.6186	7	3.3322
96	Slovenia	1468	106	706.1400	51	2078908	0	1511773	1511773	14.2288	7.2917	14.2288	3.9318	6.5598	7	4.6634
97	Kyrgyzstan	1365	14	209.6096	2	6512107	0	2593997	2593997	14.7687	7.2189	14.7687	0.6931	5.3452	4	2.6391
98	Maldives	1274	4	2361.5815	7	539469	0	4912348	4912348	15.4073	7.1499	15.4073	1.9459	7.7671	3	1.3863
99	Kenya	1192	50	22.2244	0.9	53634644	0	6783334	6783334	15.7300	7.0834	15.7300	0	3.1012	6	3.9120
44	Denmark	1123	561	193.9533	97	5790054	0	28460089	28460089	17.1640	7.0238	17.1640	4.5747	5.2676	9	6.3297
101	Lebanon	1086	26	159.0385	4	6828536	0	7967300	7967300	15.8909	6.9903	15.8909	1.3863	5.0691	5	3.2581
102	Sri Lanka	1068	9	49.8978	0.4	21403762	0	8225013	8225013	15.9227	6.9735	15.9227	0	3.9100	5	2.1972
103	Hong Kong	1066	4	142.3150	0.5	7490427	0	54180456	54180456	17.8078	6.9717	17.8078	0	4.9580	4	1.3863

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104	Tunisia	1048	47	88.7749	4	11805138	0	8216465	8216465	15.9217	6.9546	15.9217	1.3863	4.4861	3	3.8501
105	Latvia	1046	22	553.9559	12	1888237	0	4627181	4627181	15.3475	6.9527	15.3475	2.4849	6.3171	5	3.0910
106	Albania	989	31	343.6271	11	2878120	0	2975434	2975434	14.9059	6.8967	14.9059	2.3979	5.8396	7	3.4340
109	Venezuela	944	10	33.1878	0.4	28444157	0	3913136	3913136	15.1798	6.8501	15.1798	0	3.5022	0	2.3026
111	Cyprus	927	17	768.3917	14	1206416	0	12471405	12471405	16.3389	6.8320	16.3389	2.6391	6.6443	4	2.8332
113	Costa Rica	911	10	179.0107	2	5089080	0	6171253	6171253	15.6354	6.8145	15.6354	0.6931	5.1874	5	2.3026
114	Paraguay	838	11	117.6487	2	7122901	0	1500804	1500804	14.2215	6.7310	14.2215	0.6931	4.7677	2	2.3979
116	Haiti	812	25	71.3079	2	11387245	0	1726743	1726743	14.3617	6.6995	14.3617	0.6931	4.2670	4	3.2189
118	Uruguay	753	20	216.8490	6	3472463	0	2315998	2315998	14.6554	6.6241	14.6554	1.7918	5.3792	1	2.9957
119	Georgia	728	12	182.4583	3	3989952	0	4773206	4773206	15.3785	6.5903	15.3785	1.0986	5.2065	4	2.4849
121	Jordan	700	9	68.6805	0.9	10192121	0	6583885	6583885	15.7001	6.5511	15.7001	0	4.2295	3	2.1972
124	Malta	609	6	13796.3844	14	44142	0	6787694	6787694	15.7306	6.4118	15.7306	2.6391	9.5322	3	1.7918
126	Nepal	584	3	20.0842	0.1	29077526	0	6460065	6460065	15.6811	6.3699	15.6811	0	2.9999	7	1.0986
129	Jamaica	544	9	183.7962	3	2959800	0	5916836	5916836	15.5933	6.2989	15.5933	1.0986	5.2138	1	2.1972
130	Tanzania	509	21	8.5501	0.4	59531669	0	3763319	3763319	15.1408	6.2324	15.1408	0	2.1459	4	3.0445
131	Ethiopia	494	5	4.3095	0.04	114630633	0	5559202	5559202	15.5310	6.2025	15.5310	0	1.4608	4	1.6094
135	Réunion	449	1	501.8851	1	894627	0	2184862	2184862	14.5971	6.1070	14.5971	0	6.2184	0	0
139	Cabo Verde	362	3	651.8682	5	555327	0	1885534	1885534	14.4497	5.8916	14.4497	1.6094	6.4798	2	1.0986
142	Montenegro	324	9	515.8759	14	628058	0	2045407	2045407	14.5311	5.7807	14.5311	2.6391	6.2459	0	2.1972
143	Vietnam	324	0	3.3318	0	97243794	0	60507574	60507574	17.9183	5.7807	17.9183	0	1.2035	0	0
73	Thailand	304	56	4.3564	0.8	69781627	0	105905344	105905344	18.4781	5.7170	18.4781	0	1.4717	11	4.0254
28	Portugal	302	1289	29.6086	126	10199740	0	44407341	44407341	17.6089	5.7104	17.6089	4.8363	3.3881	3	7.1616
151	Myanmar	201	6	3.6968	0.1	54370772	0	7934861	7934861	15.8868	5.3033	15.8868	0	1.3075	1	1.7918
152	Mauritania	200	6	43.1475	1	4635263	0	3614373	3614373	15.1004	5.2983	15.1004	0	3.7646	2	1.7918
153	Martinique	197	14	524.9204	37	375295	0	1707781	1707781	14.3507	5.2832	14.3507	3.6109	6.2632	10	2.6391
155	Uganda	175	0	3.8405	0	45566443	0	1634462	1634462	14.3068	5.1648	14.3068	0	1.3456	8	0
157	Guadeloupe	156	13	389.8860	32	400117	0	1921961	1921961	14.4689	5.0499	14.4689	3.4657	5.9659	0	2.5649
165	Cambodia	124	0	7.4281	0	16693317	0	10831317	10831317	16.1980	4.8203	16.1980	0	2.0053	2	0
166	Trinidad and Tobago	116	8	82.9157	6	1399011	0	2625430	2625430	14.7808	4.7536	14.7808	1.7918	4.4178	13	2.0794
167	Aruba	101	3	946.4195	28	106718	0	2562903	2562903	14.7567	4.6151	14.7567	3.3322	6.8527	1	1.0986
168	Bahamas	97	11	246.9224	28	392836	0	4093422	4093422	15.2249	4.5747	15.2249	3.3322	5.5091	4	2.3979
170	Barbados	90	7	313.2200	24	287338	0	1847092	1847092	14.4291	4.4998	14.4291	3.1781	5.7469	0	1.9459
177	Angola	60	3	1.8325	0.09	32743009	0	1744596	1744596	14.3720	4.0943	14.3720	0	0.6057	7	1.0986
179	Zimbabwe	51	4	3.4369	0.3	14838856	0	1859307	1859307	14.4357	3.9318	14.4357	0	1.2346	4	1.3863
180	Macao	45	0	69.4064	0	648355	0	7941893	7941893	15.8877	3.8067	15.8877	0	4.2400	8	0
65	Cameroon	44	159	1.6623	6	26468556	0	1556441	1556441	14.2579	3.7842	14.2579	1.7918	0.5082	6	5.0689
191	Laos	19	0	2.6157	0	7263819	0	3195881	3195881	14.9774	2.9444	14.9774	0	0.9615	0	0
192	Belize	18	2	45.3616	5	396811	0	2584571	2584571	14.7651	2.8904	14.7651	1.6094	3.8147	2	0.6931
193	Fiji	18	0	20.0949	0	895748	0	2230401	2230401	14.6177	2.8904	14.6177	0	3.0005	2	0
201	Turks and Caicos	12	1	310.4064	26	38659	0	1929485	1929485	14.4728	2.4849	14.4728	3.2581	5.7379	14	0
209	Papua New Guinea	8	0	1.0000	0	8927762	0	2536141	2536141	14.7462	2.0794	14.7462	0	0	5	0