
Supplementary information

Genomic reconstruction of the SARS-CoV-2 epidemic in England

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Genomic reconstruction of the SARS-CoV-2 epidemic in England

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Abstract

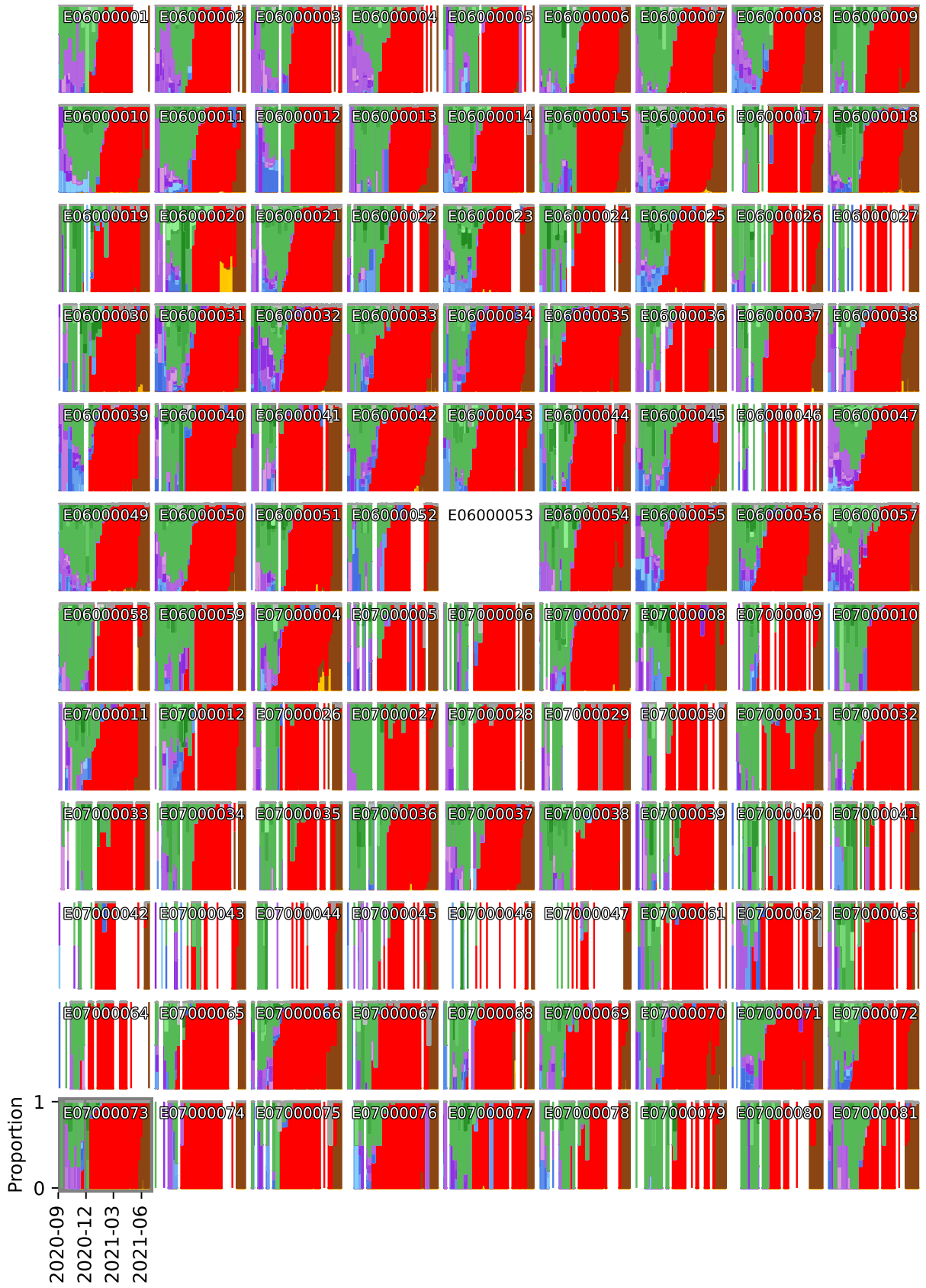
The evolution of the SARS-CoV-2 pandemic continuously produces new variants, which warrant timely epidemiological characterisation. Here we use the dense genomic surveillance generated by the COVID-19 Genomics UK Consortium to reconstruct the dynamics of 71 different lineages in each of 315 English local authorities between September 2020 and June 2021. This analysis reveals a series of sub-epidemics that peaked in the early autumn of 2020, followed by a jump in transmissibility of the B.1.1.7/Alpha lineage. Alpha grew when other lineages declined during the second national lockdown and regionally tiered restrictions between November and December 2020. A third more stringent national lockdown suppressed Alpha and eliminated nearly all other lineages in early 2021. However, a series of variants (mostly containing the spike E484K mutation) defied these trends and persisted at moderately increasing proportions. Accounting for sustained introductions, however, indicates that their transmissibility is unlikely to have exceeded that of Alpha. Finally, B.1.617.2/Delta was repeatedly introduced to England and grew rapidly in the early summer of 2021, constituting approximately 98% of sampled SARS-CoV-2 genomes on June 26.

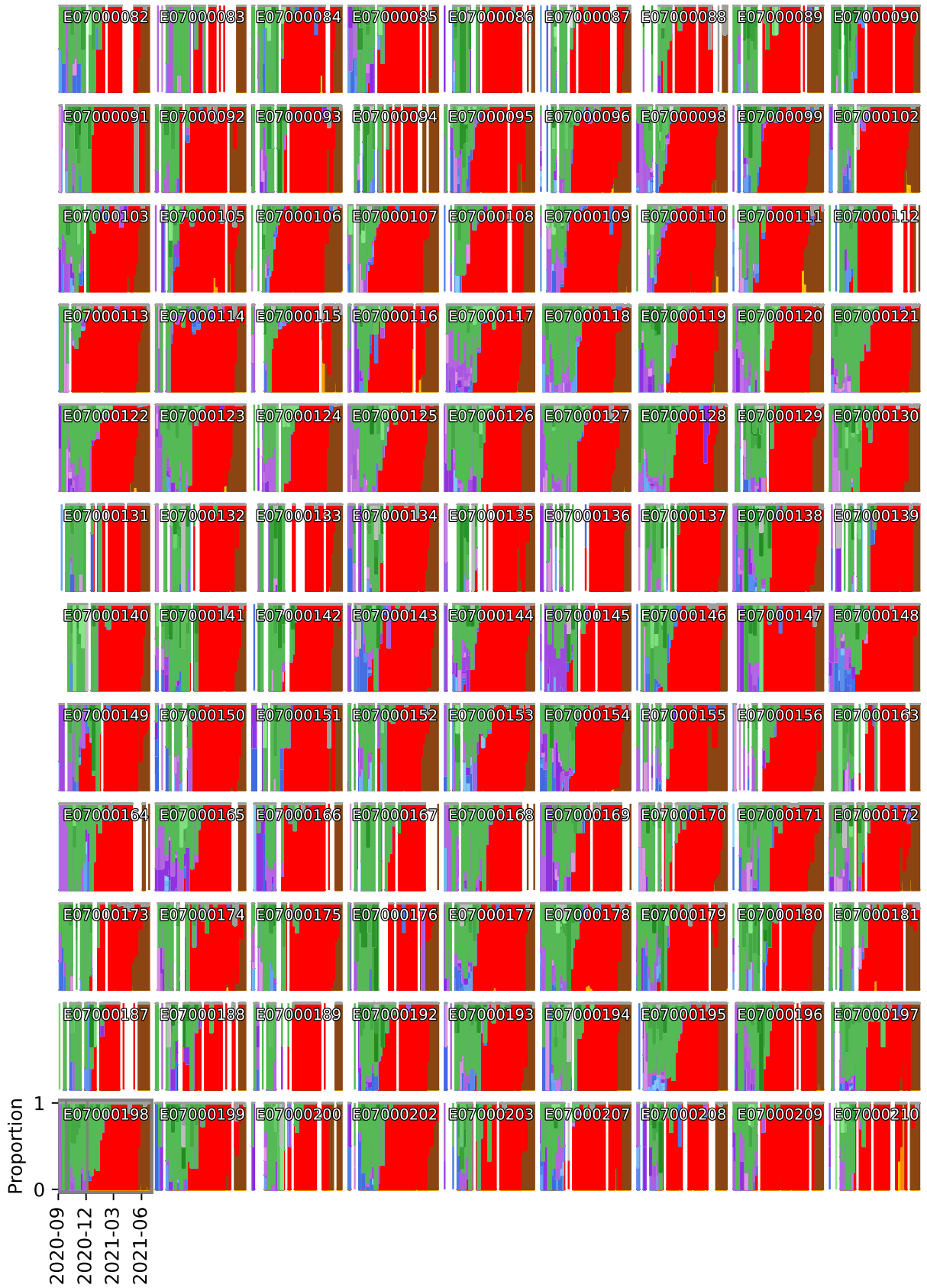
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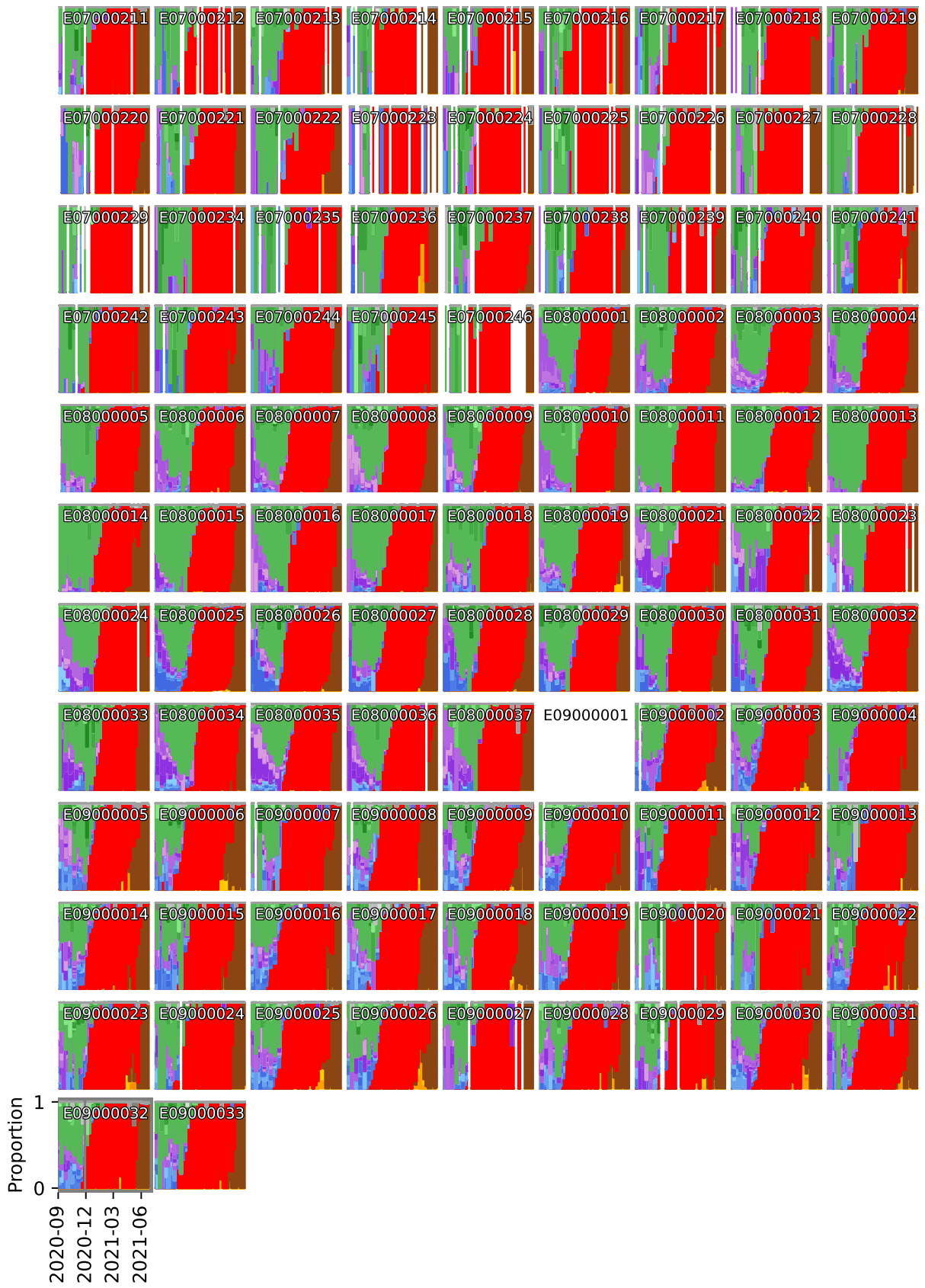
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1 Supplementary Note 1

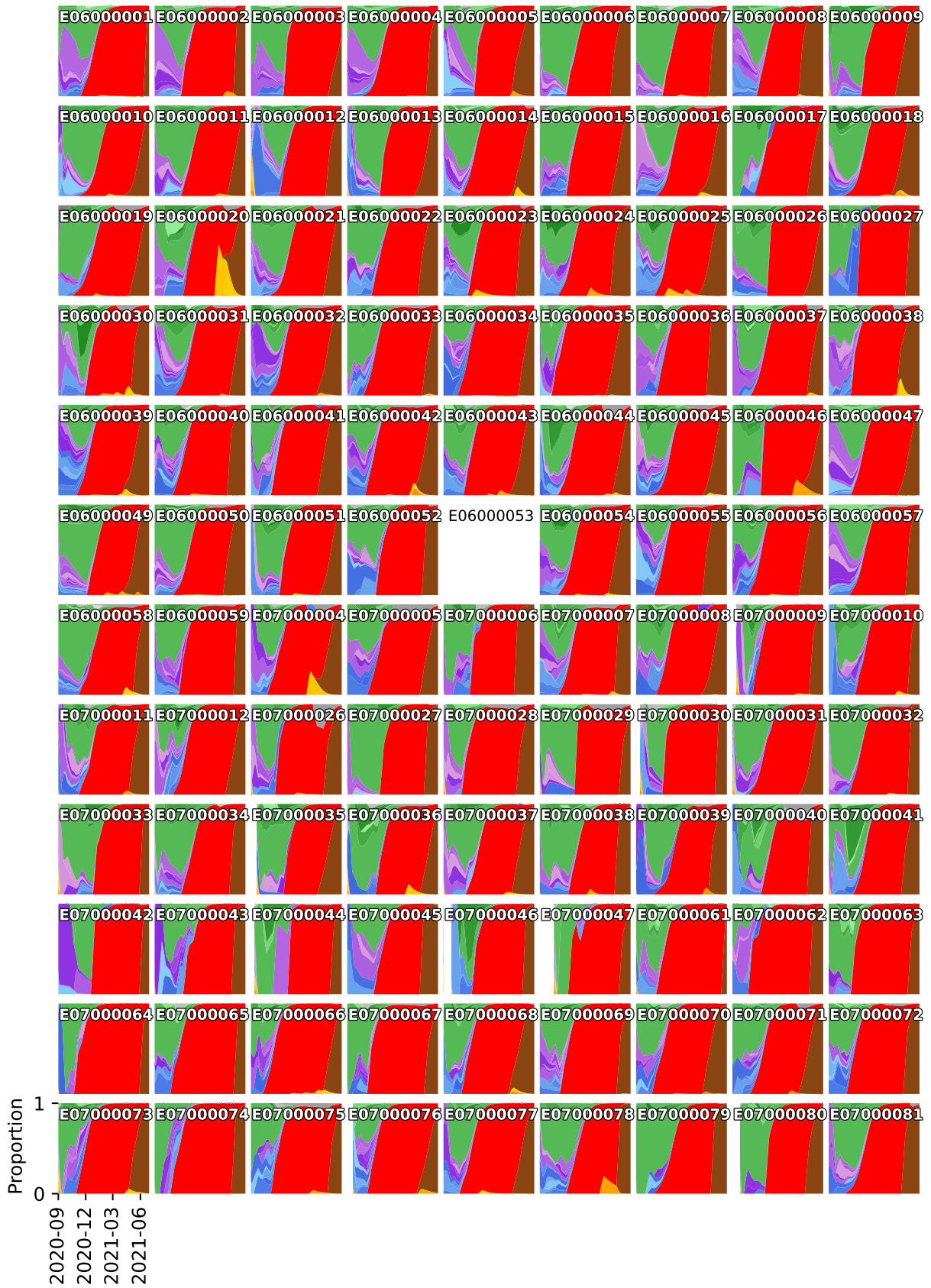
Supplementary Note 1 Fig. 1: **Observed proportions of sequenced SARS-Cov2 lineages in 315 LTLA in England.** The titles in each tile refer to LTLA look up codes (Supplementary Note 3) and colours indicate major SARS-CoV-2 lineages (blue: B.1, purple: B.1.1, green: B.1.177, red: B.1.1.7 (Alpha), orange: other VOC/VUI, brown: B.1.617.2 (Delta) and grey: Other (A & B)).

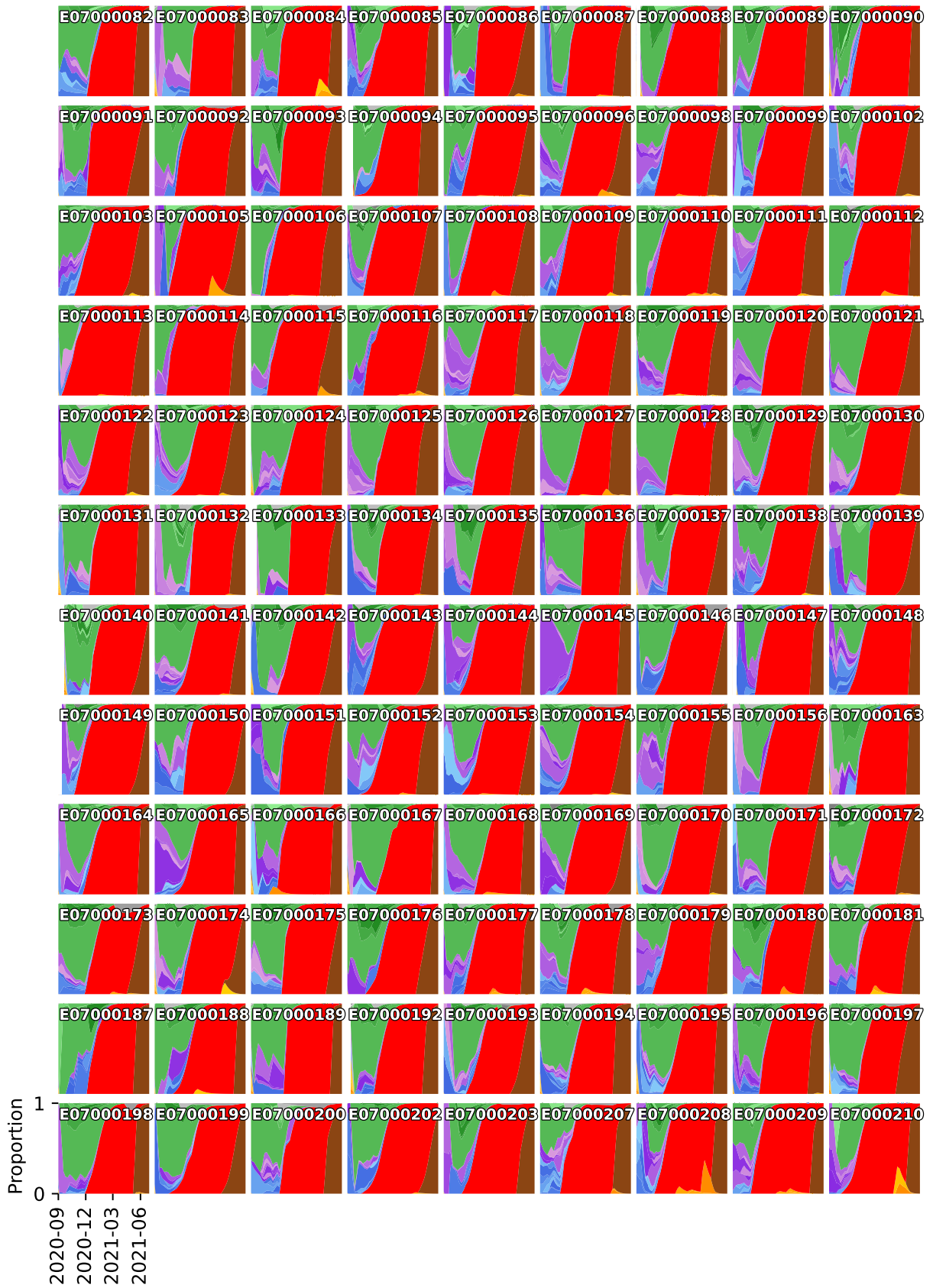


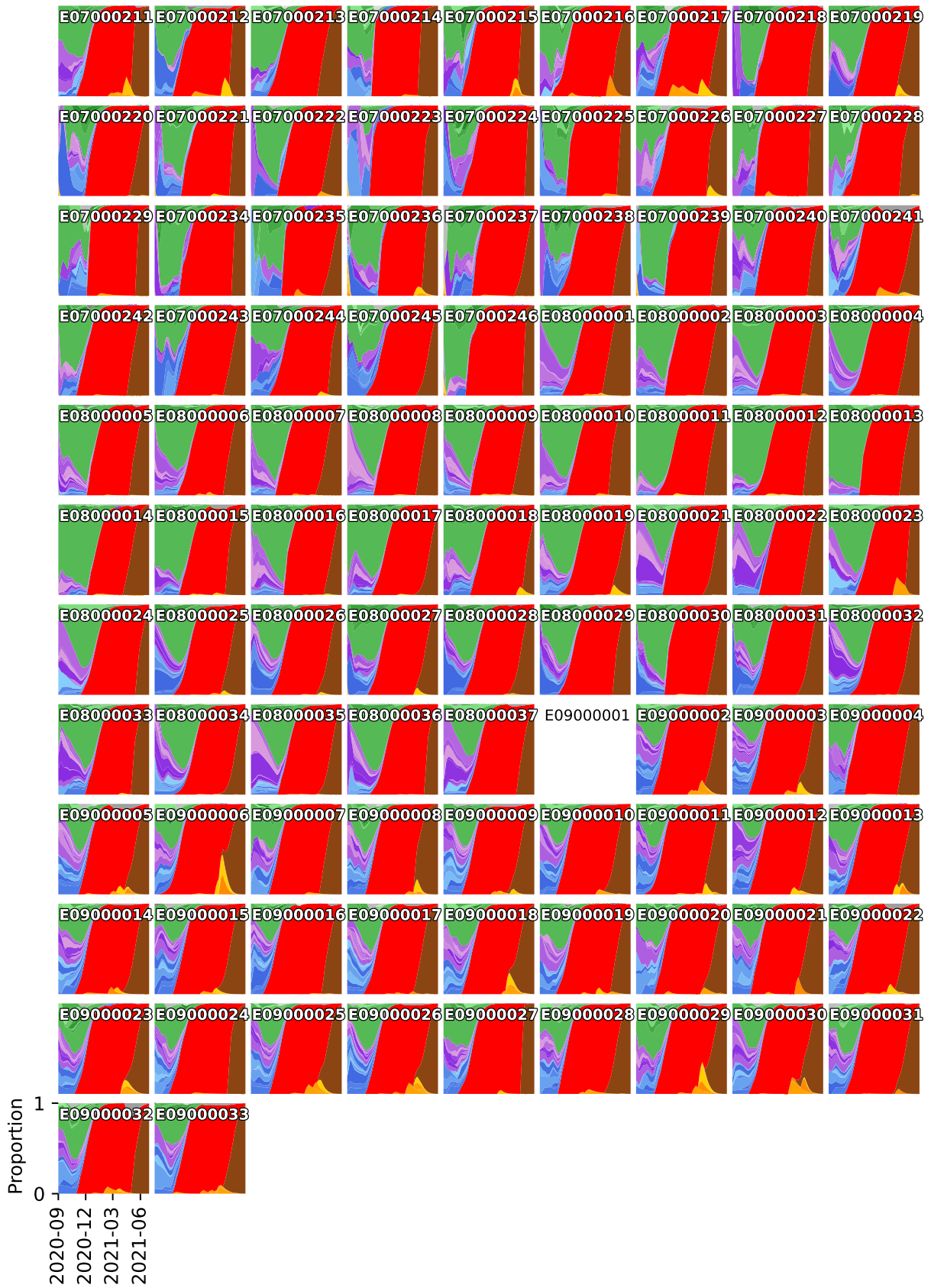




Supplementary Note 1 Fig. 2: **Modelled proportions of sequenced SARS-Cov2 lineages in 315 LTLA in England.** The titles in each tile refer to LTLA look up codes (Supplementary Note 3) and colours indicate major SARS-CoV-2 lineages (blue: B.1, purple: B.1.1, green: B.1.177, red: B.1.1.7 (Alpha), orange: other VOC/VUI, brown: B.1.617.2 (Delta) and grey: Other (A & B)).

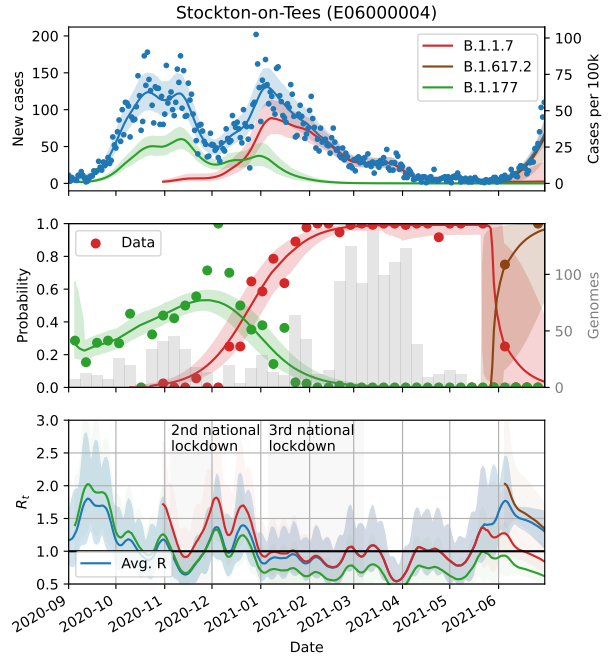
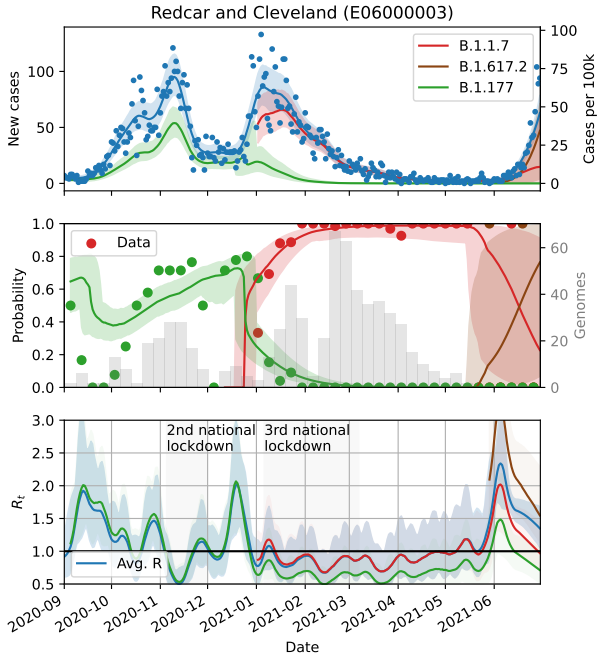
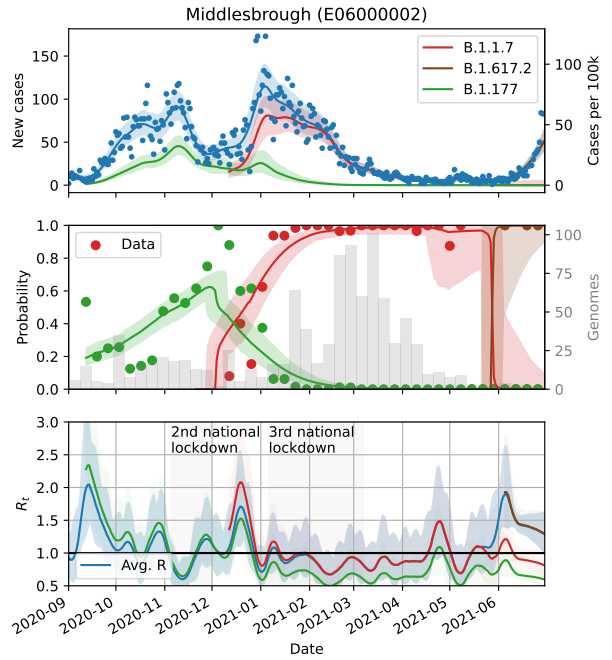
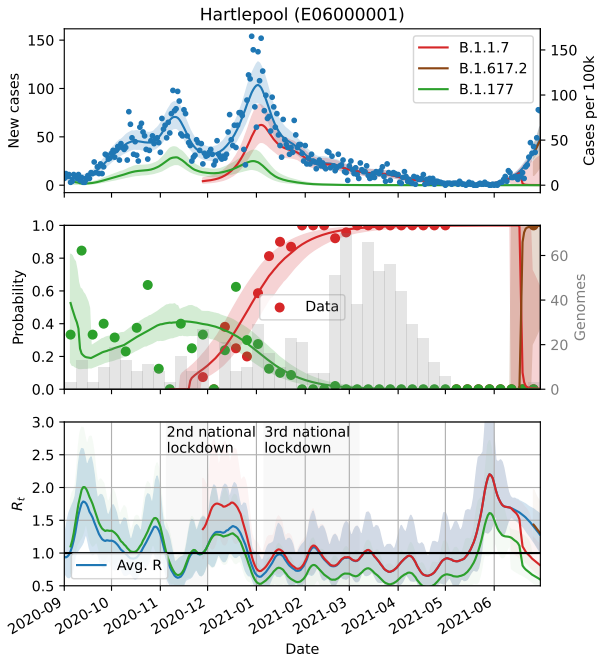


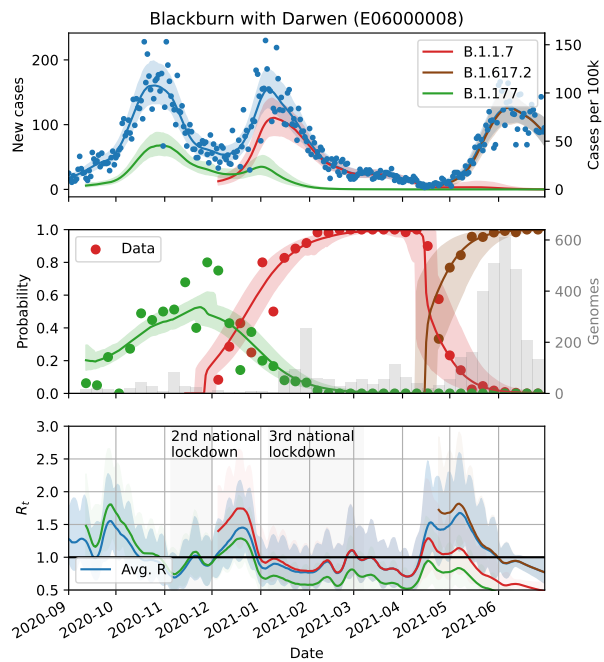
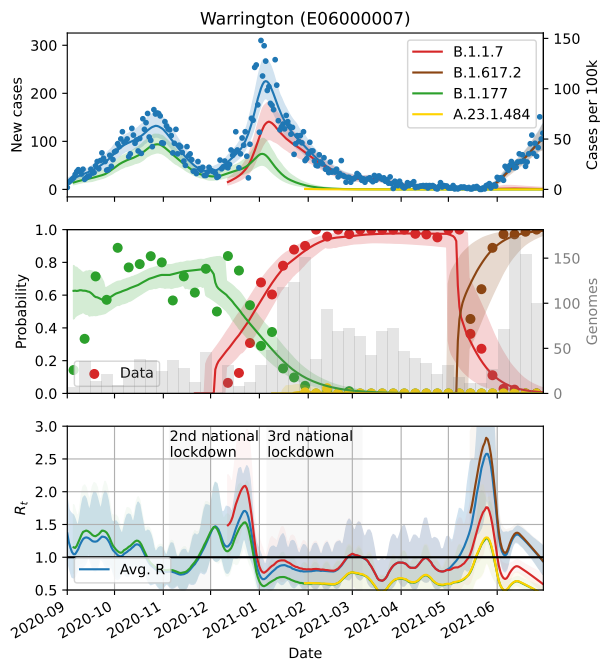
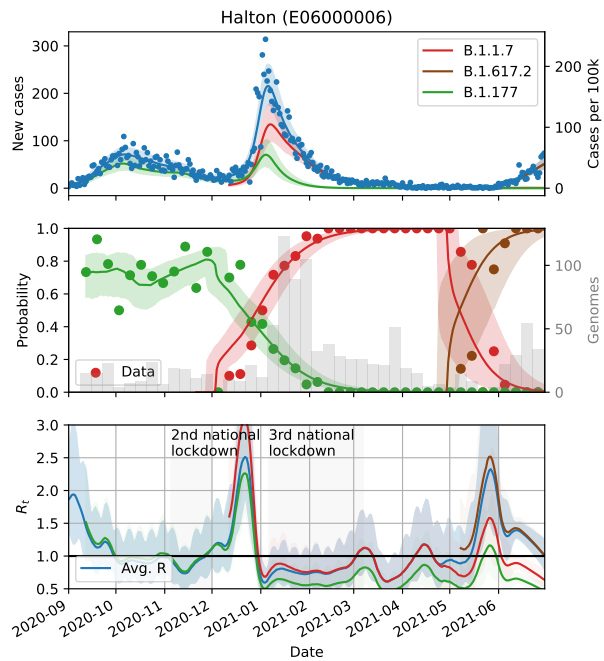
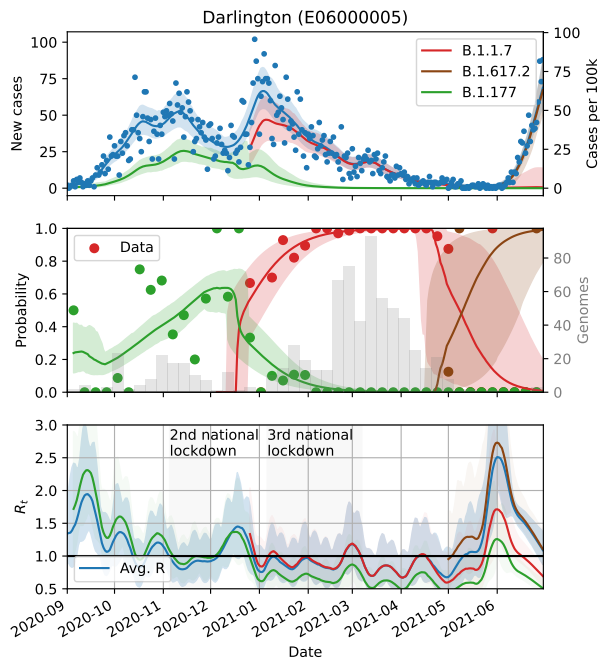


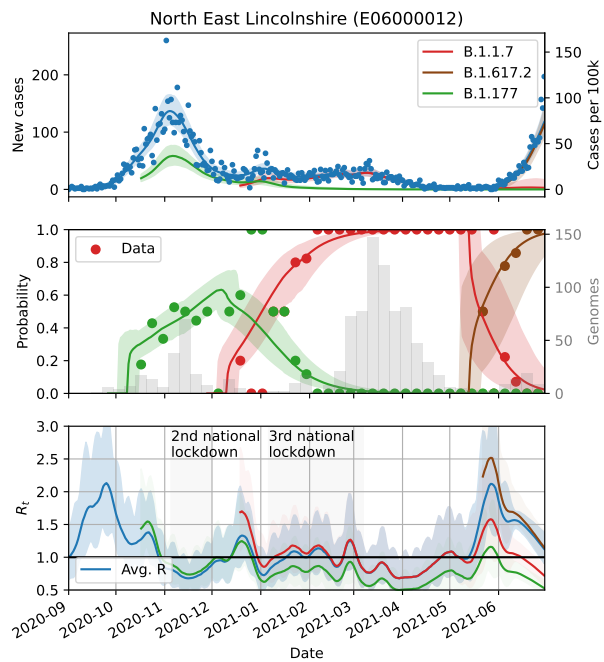
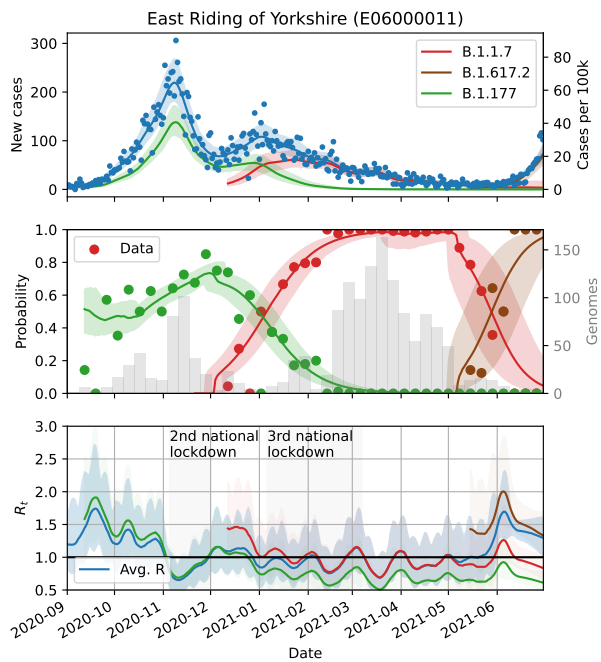
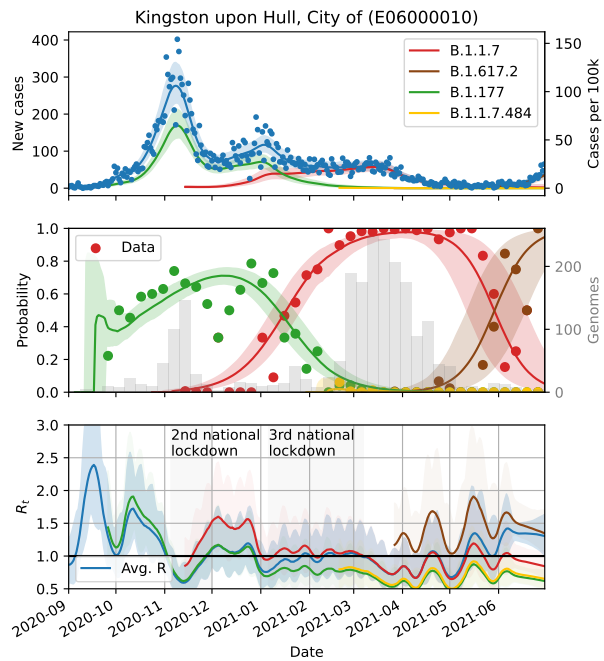
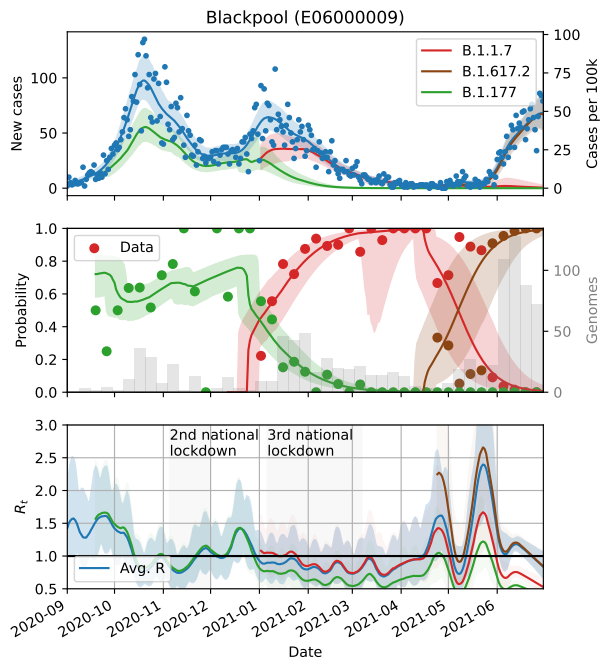


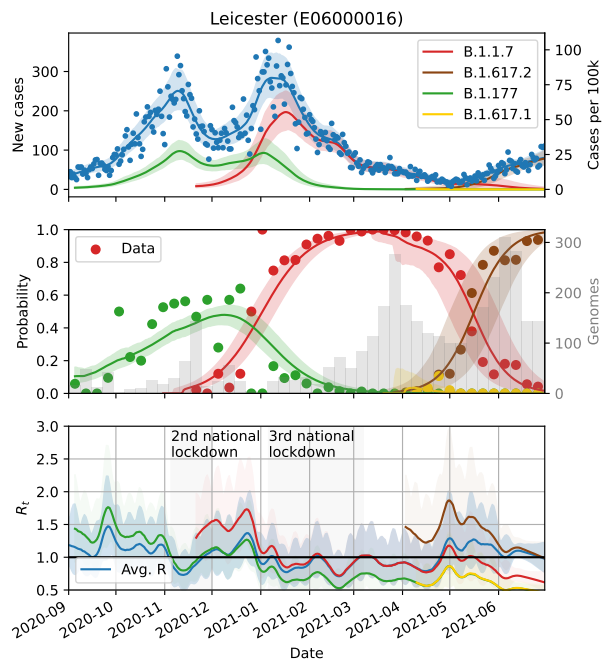
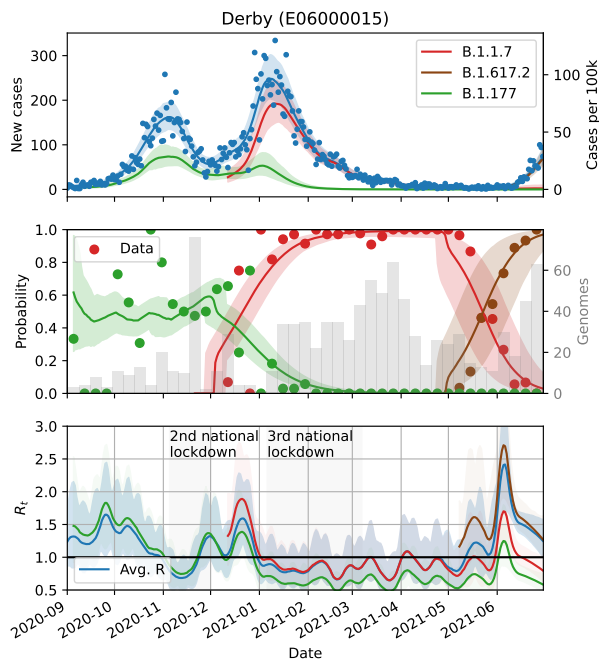
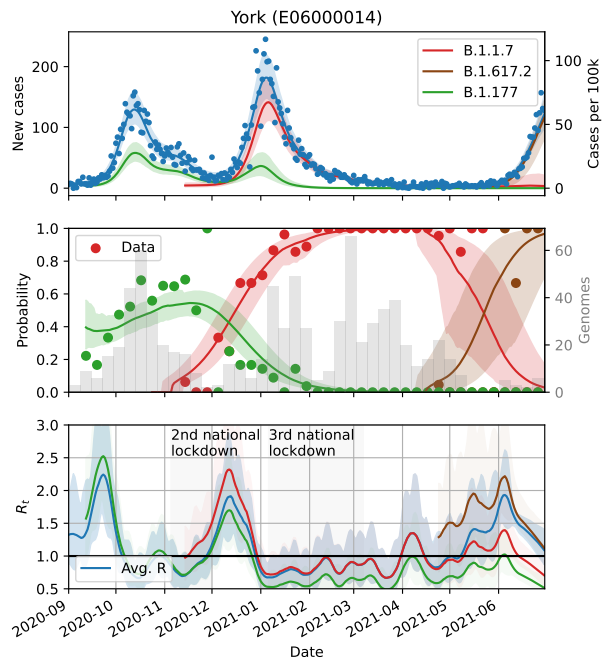
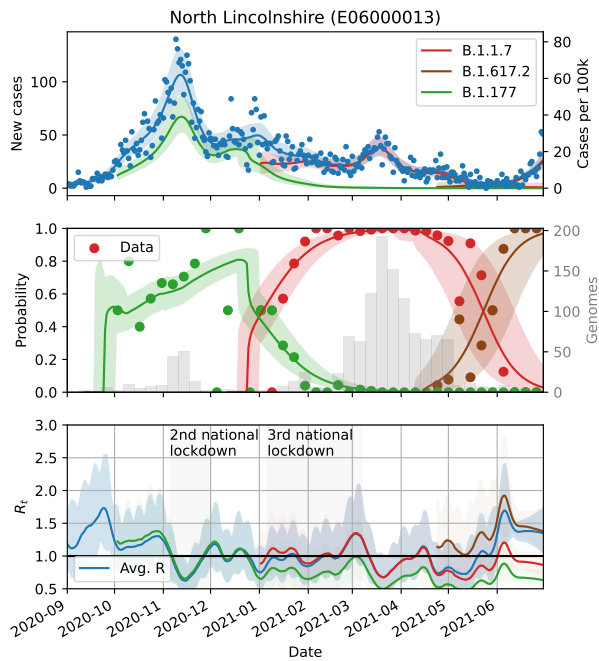
2 Supplementary Note 2

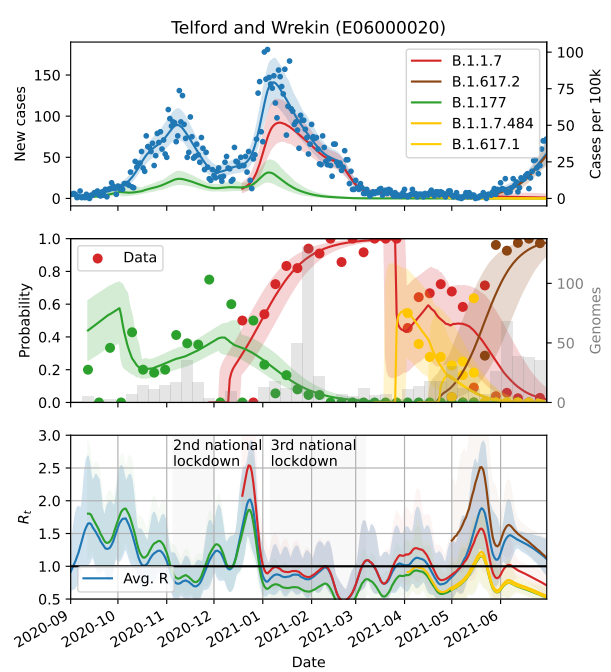
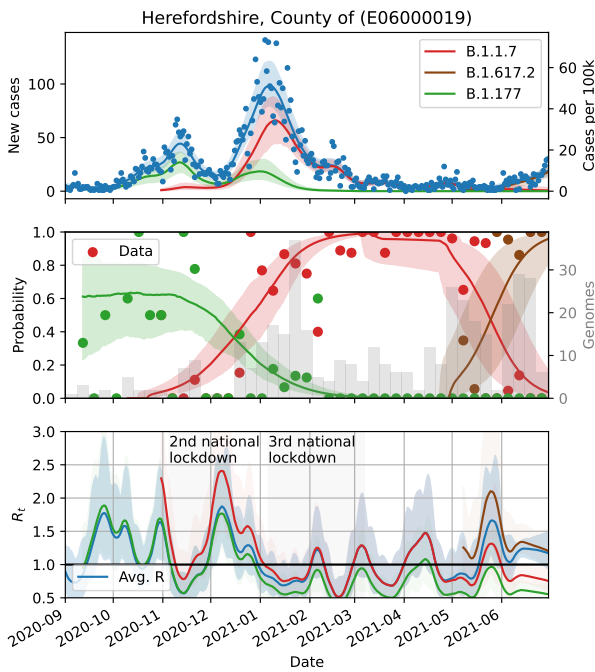
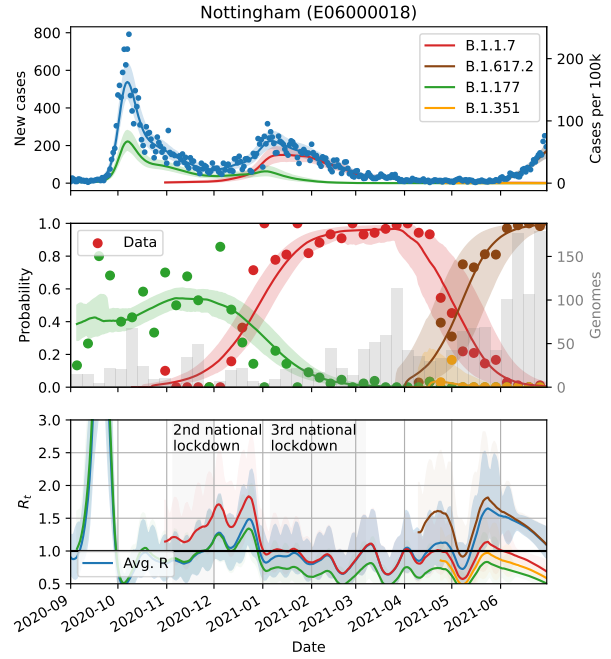
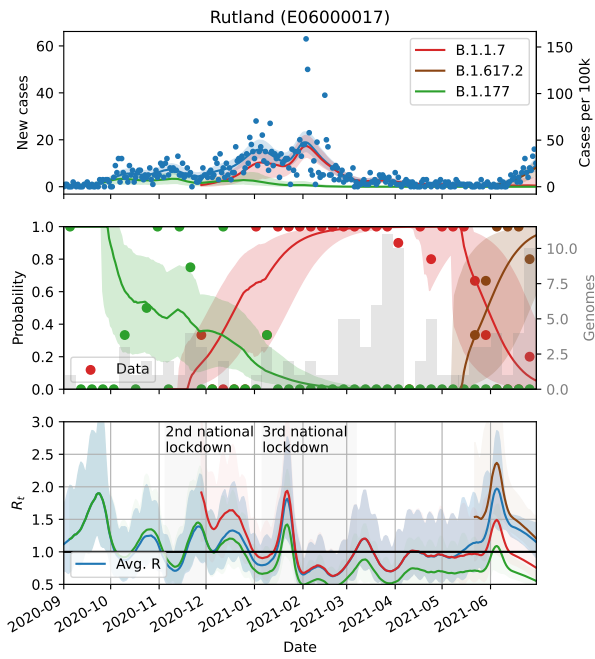
Supplementary Note 2 Fig. 1: **Spatiotemporal model of 71 SARS-CoV-2 lineages in 315 English LTLAs between September 2020 and June 2021.** Upper panel: Total and relative lineage-specific incidence of B.1.177, B.1.1.7 (Alpha), B.1.617.2 (Delta) and prevalent VUI/VOC (if present). Middle panel: Modelled proportions of B.1.177, B.1.1.7 (Alpha), B.1.617.2 (Delta) and prevalent VUI/VOC (if present). Bottom panel: Local lineage-specific R_t values for B.1.177, B.1.1.7 (Alpha), B.1.617.2 (Delta) and prevalent VUI/VOC (if present) and the average R_t value (growth per 5.1d) of all other lineages in the same periods. In a small number of LTLAs (Redcar and Cleveland, Southampton, County Durham, Cheshire West and Chester, Cornwall, Bournemouth, Erewash, Stockport) we noted very large R_t values at around the time of the introduction of the delta variant. These are more likely reflections of stochastic introduction events at times of very low incidence, rather than sustained transmission.

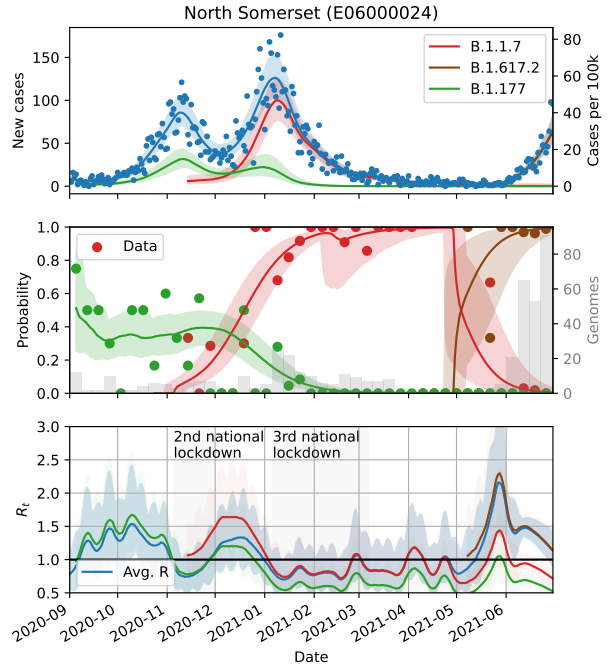
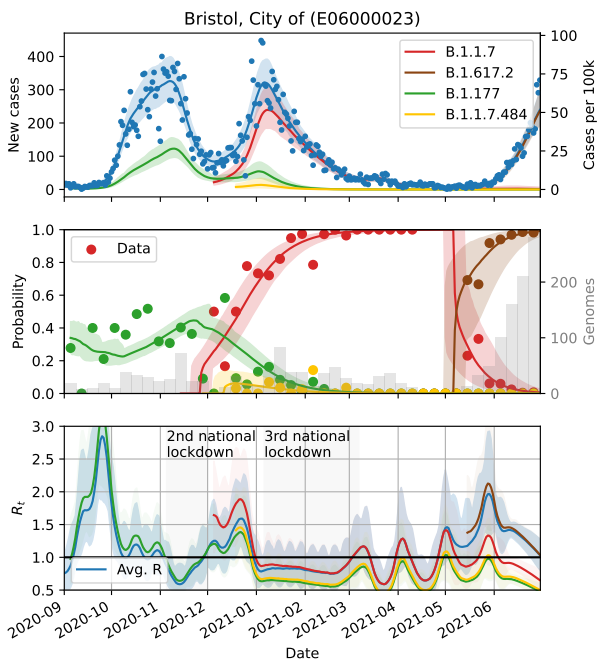
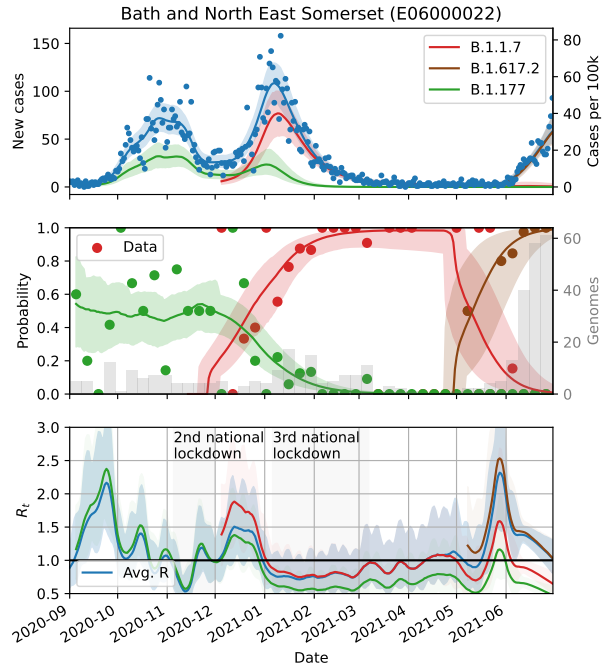
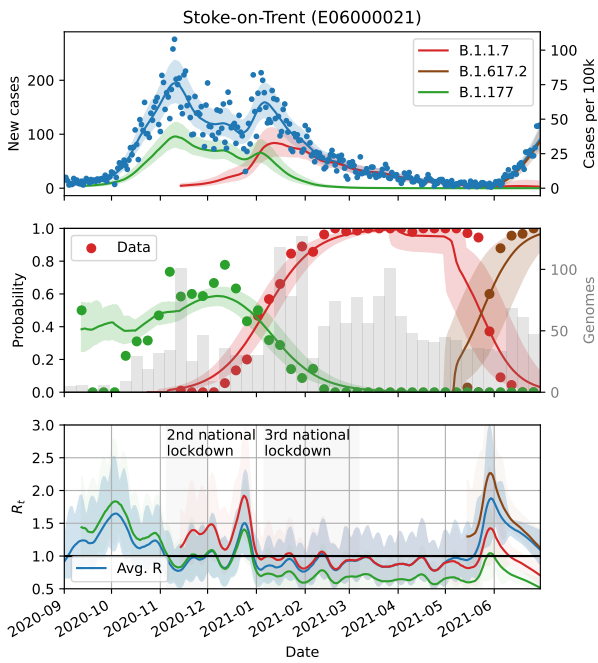


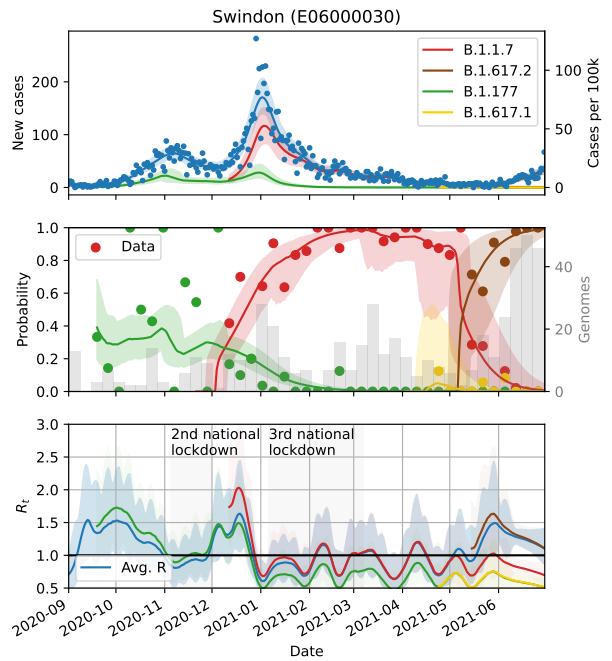
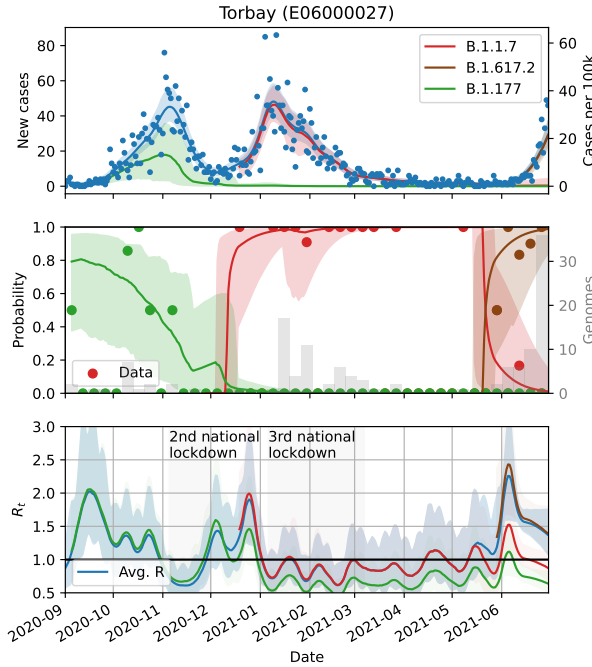
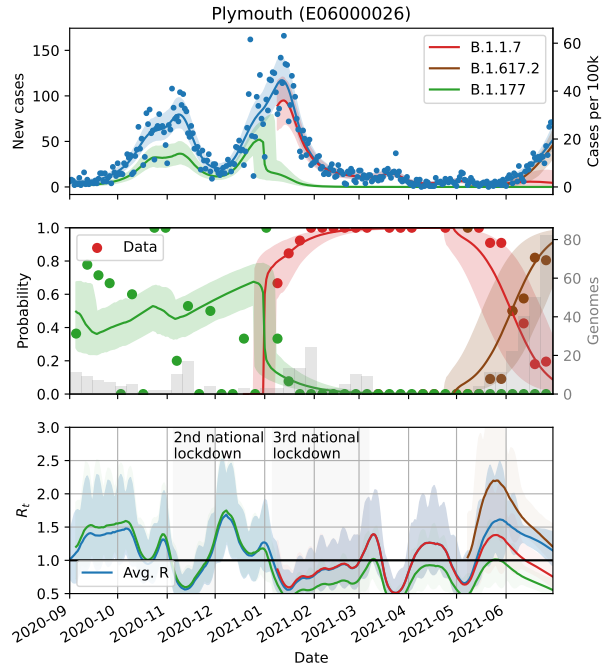
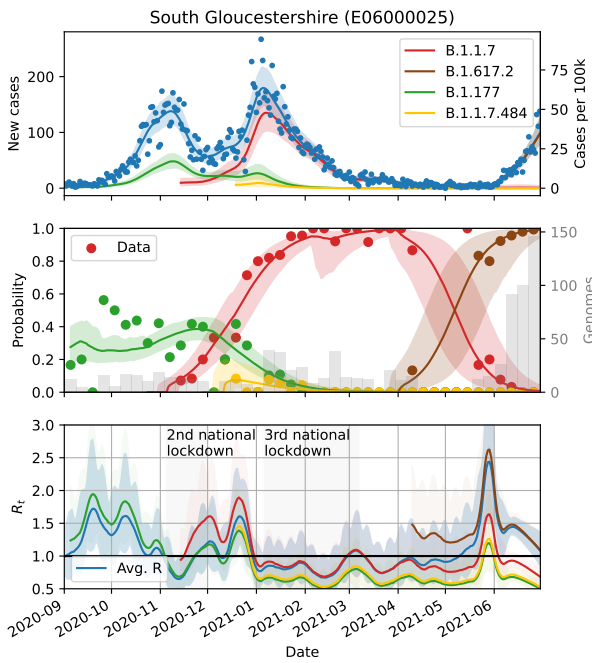


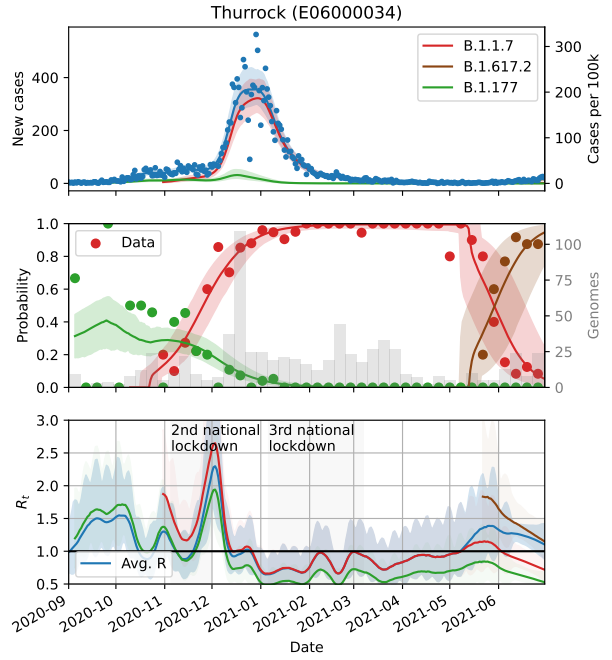
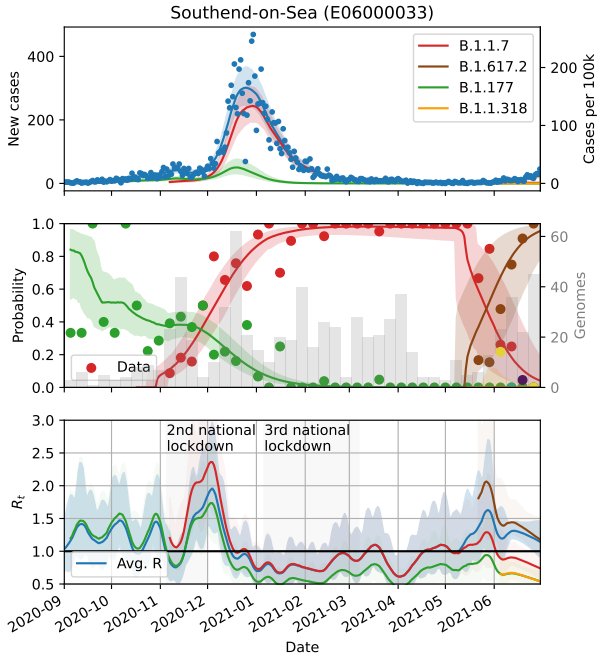
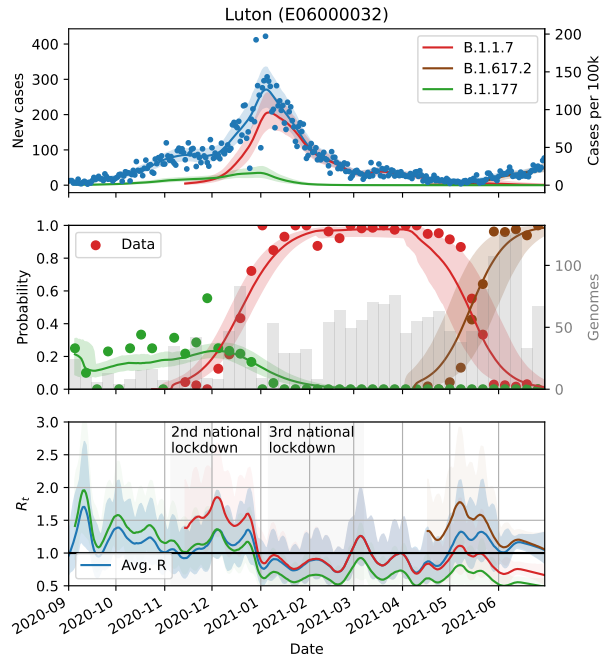
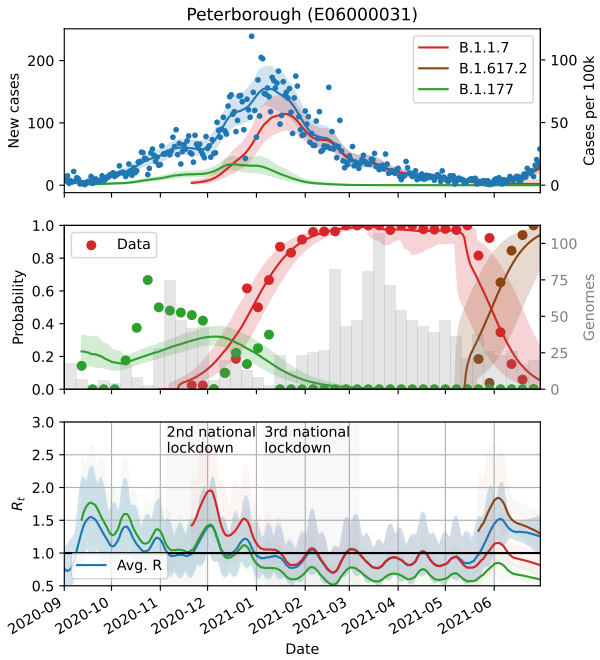


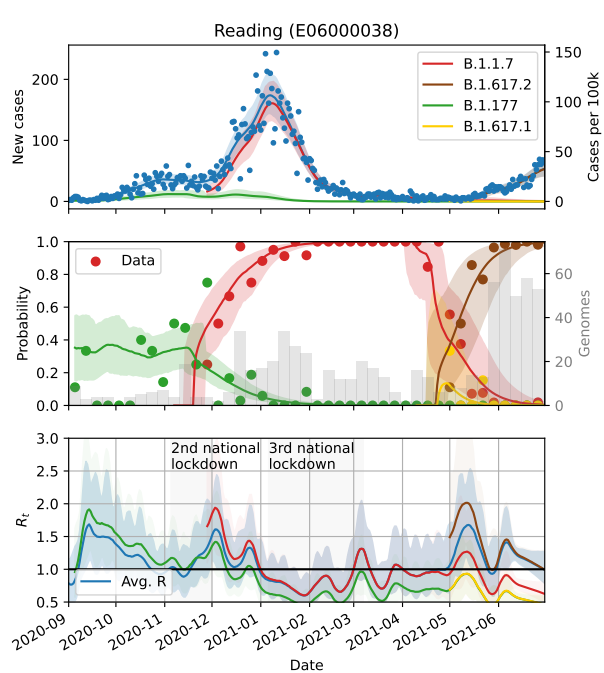
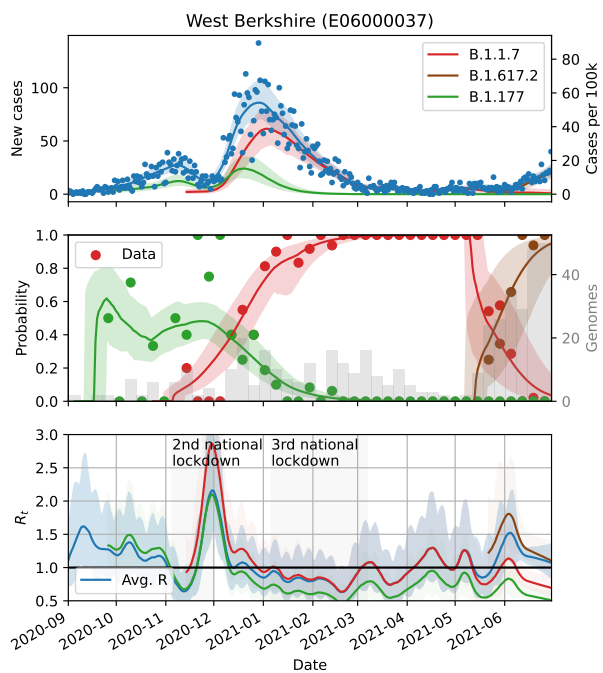
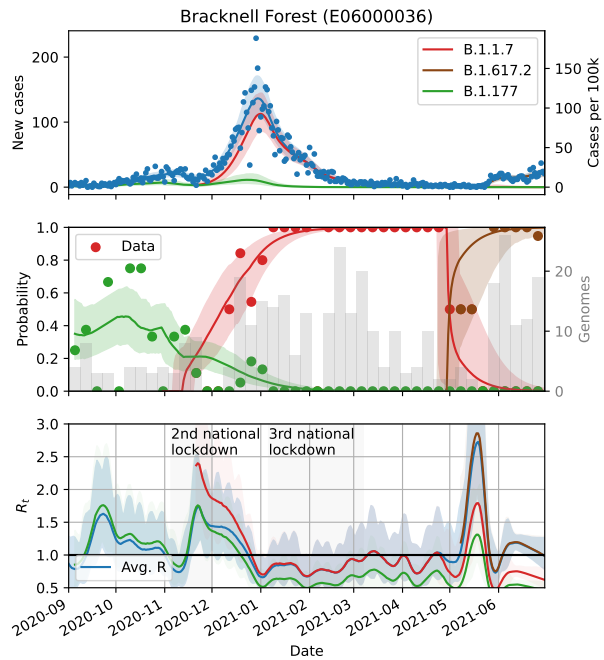
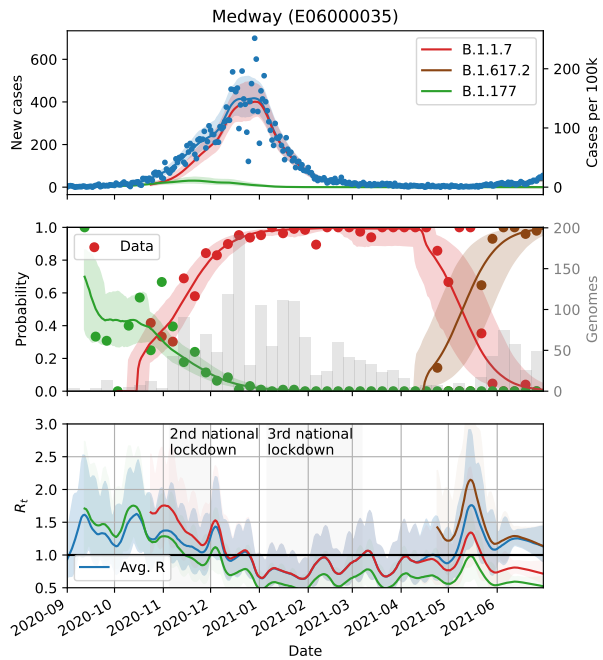


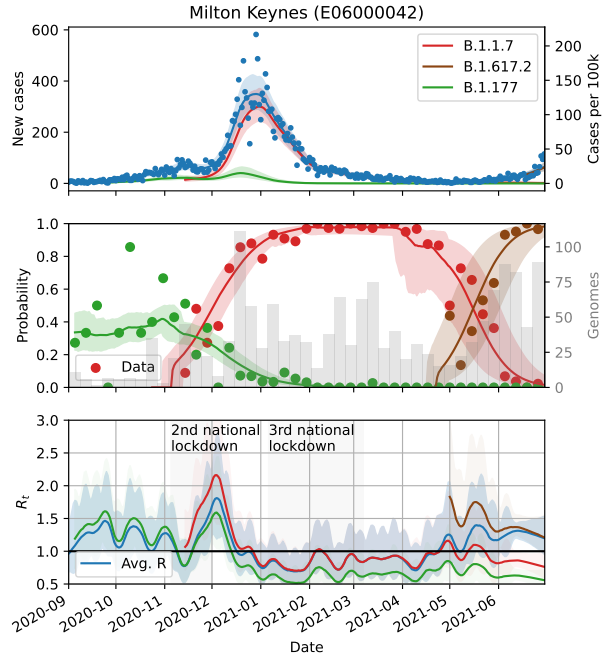
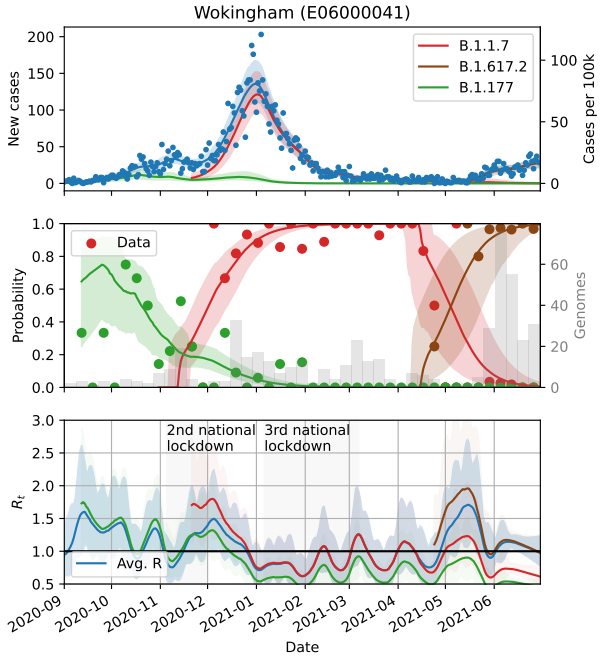
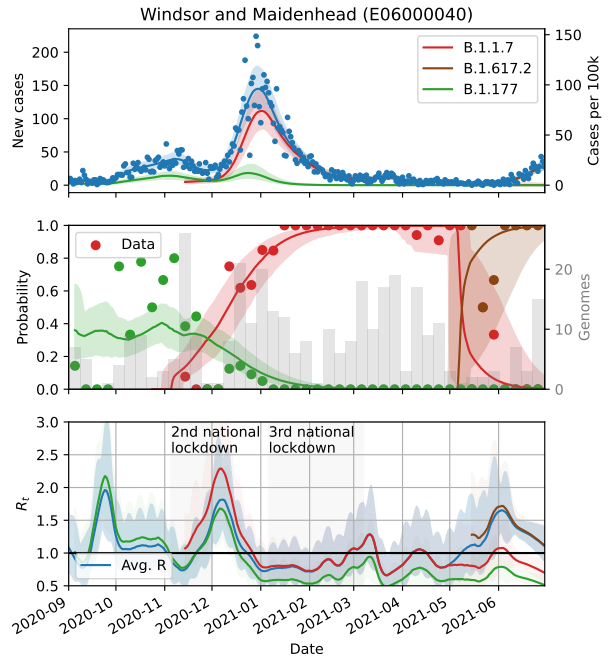
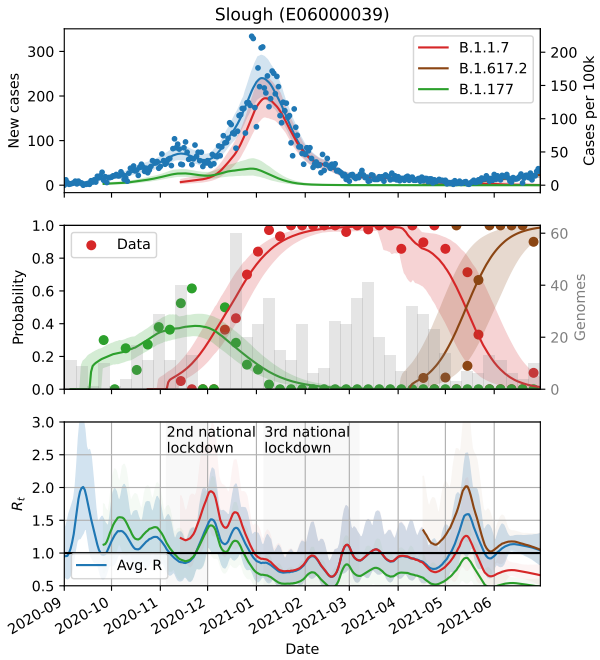


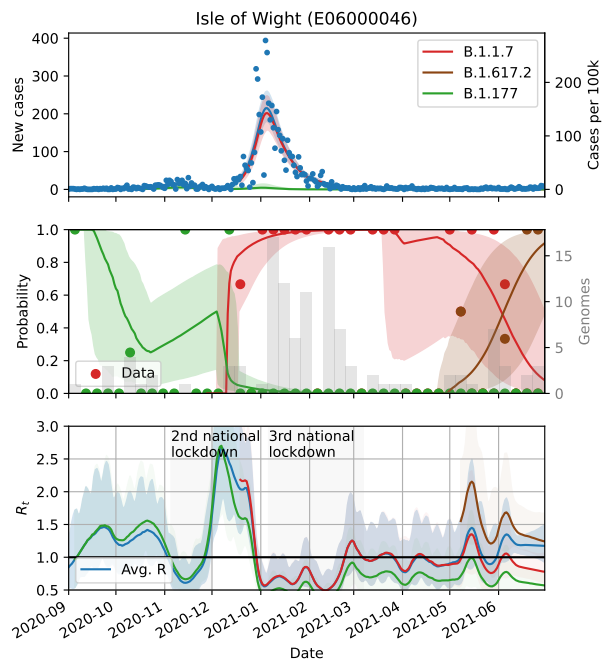
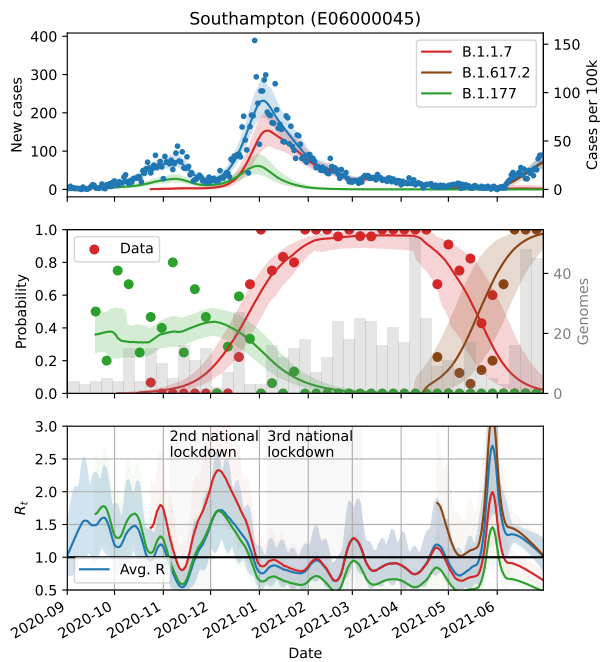
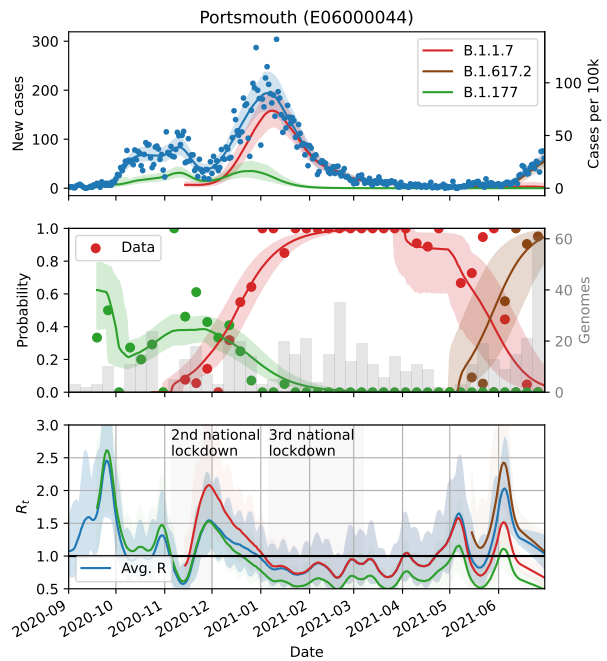
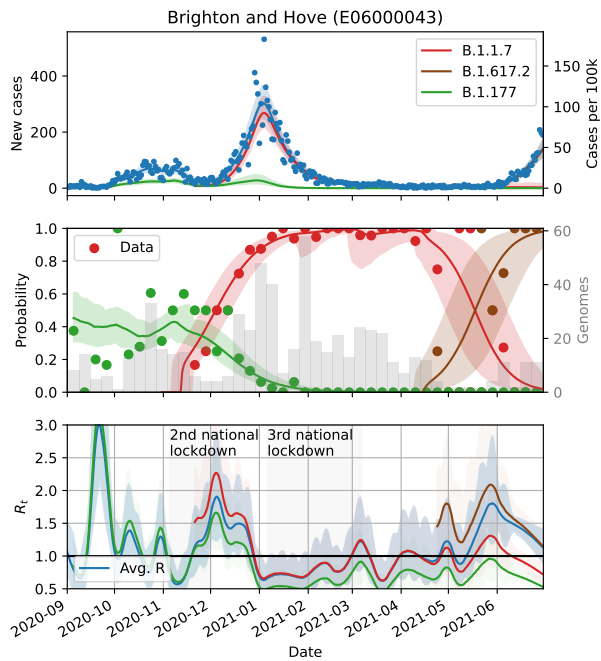


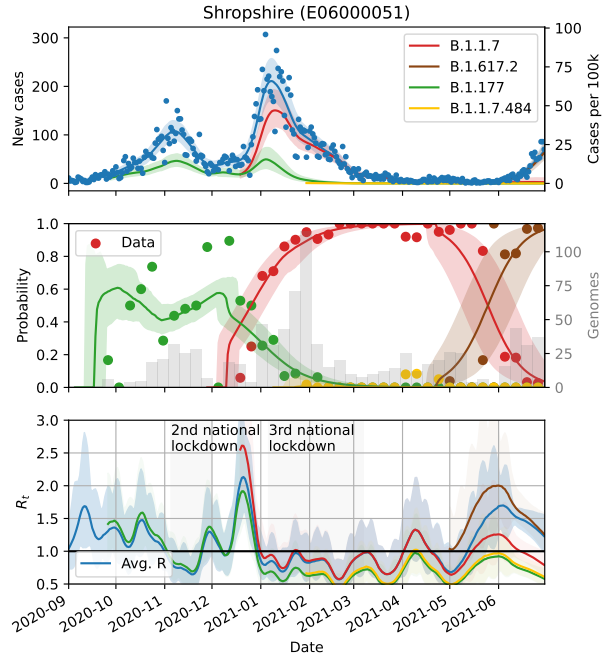
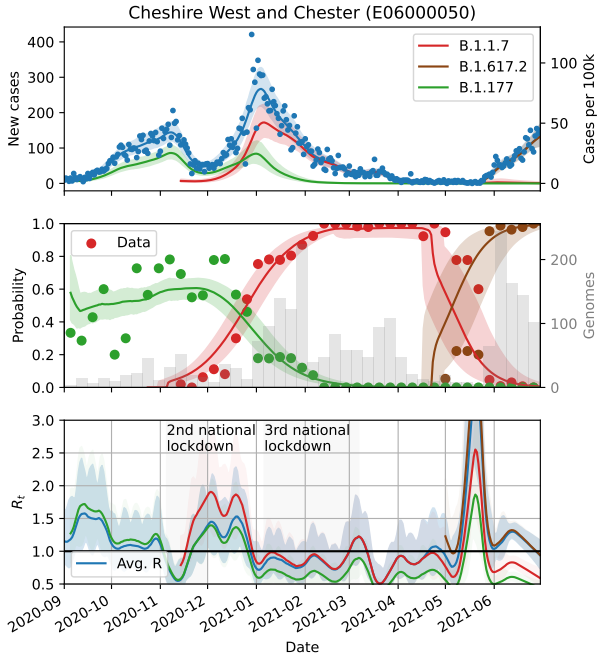
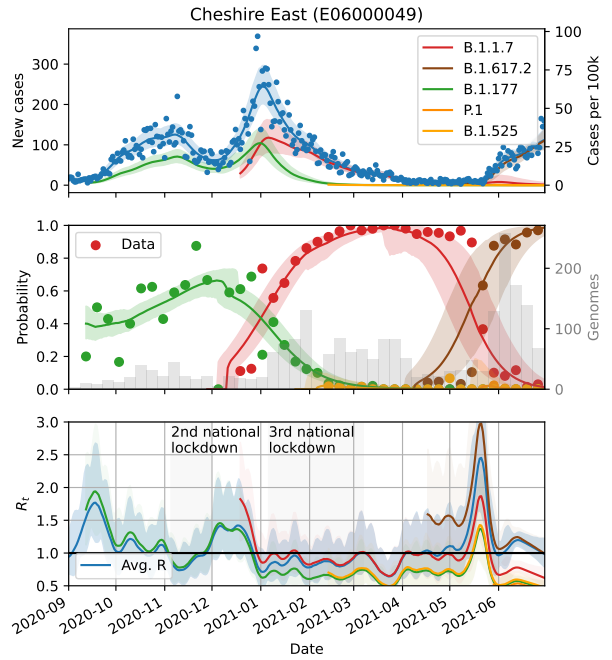
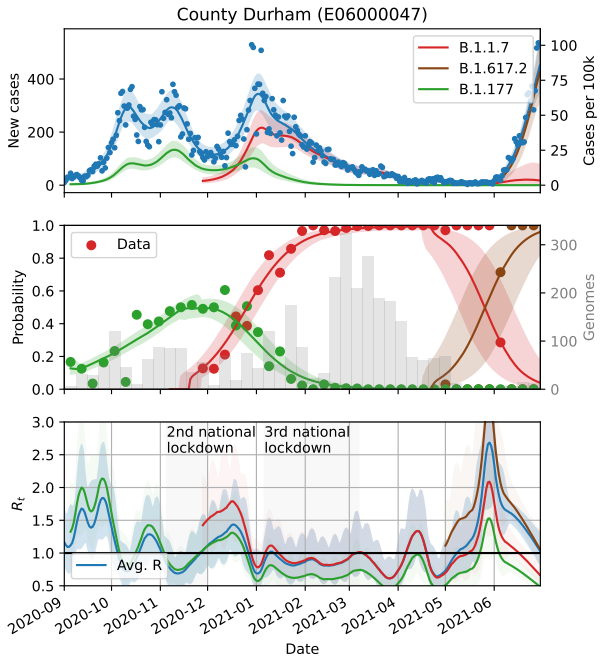


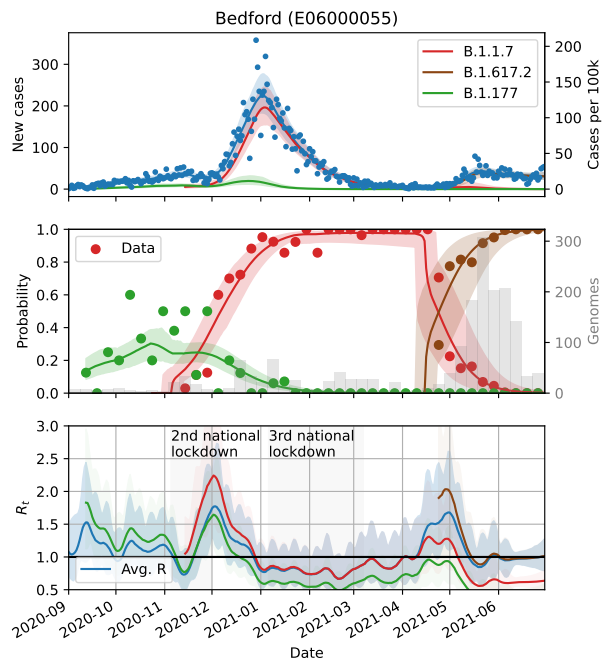
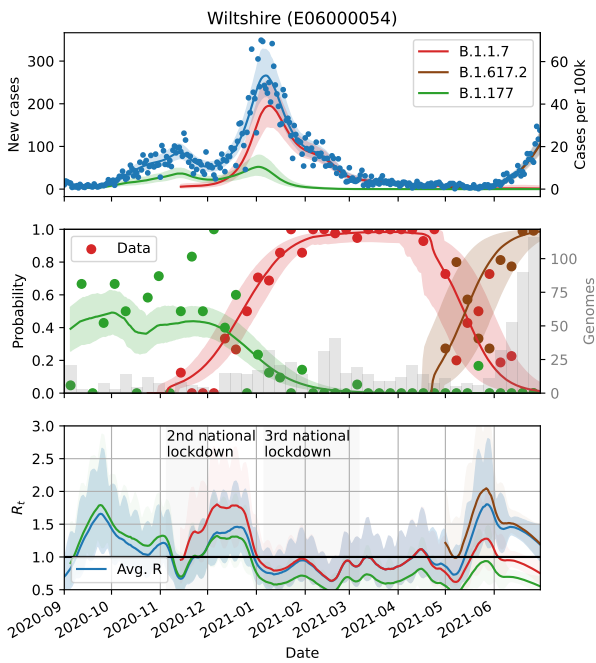
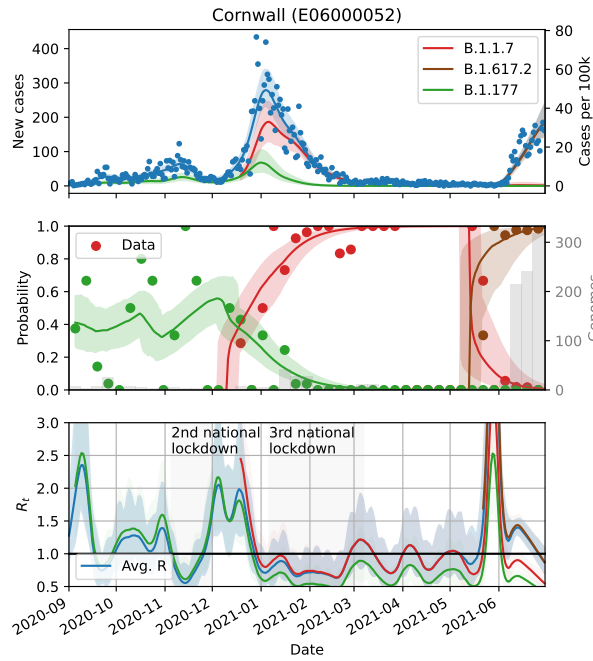


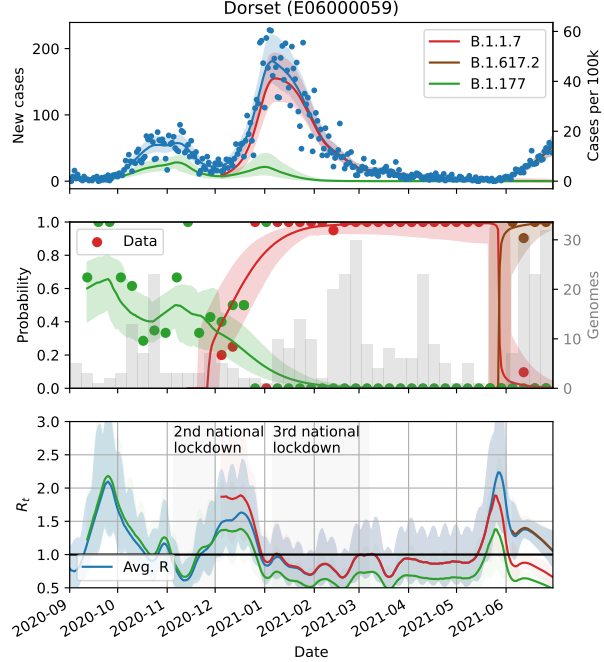
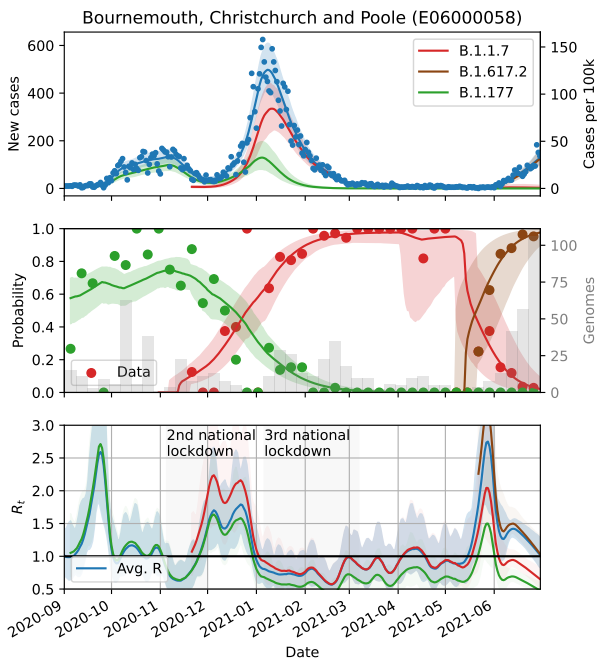
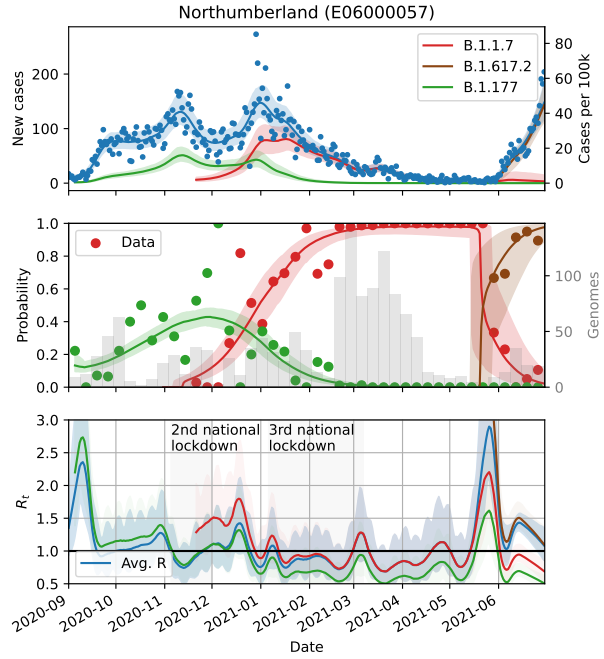
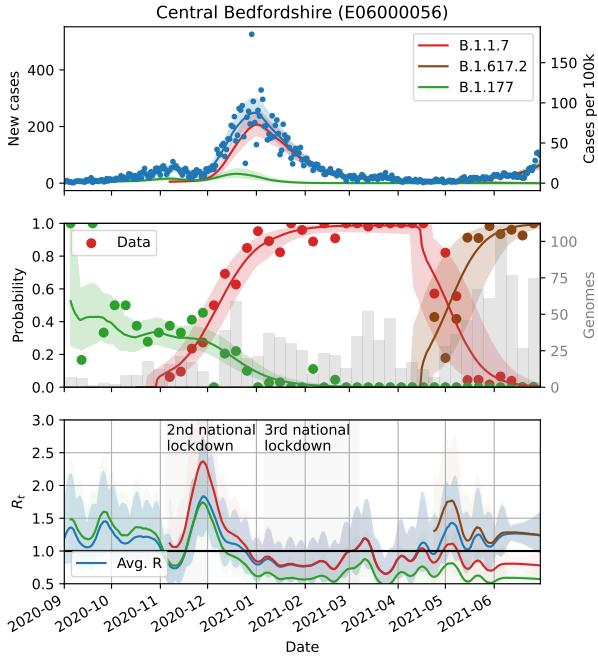


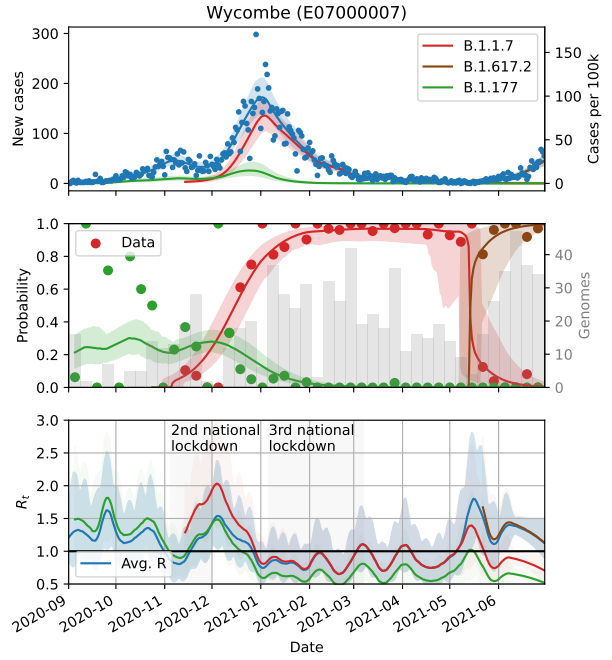
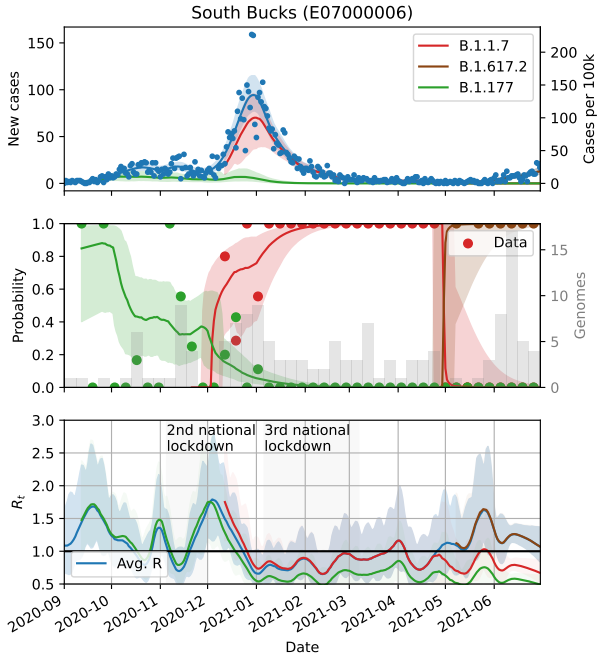
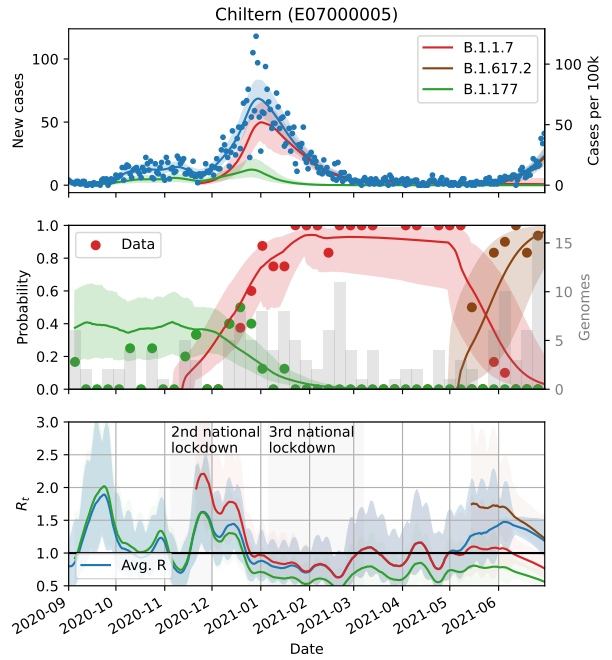
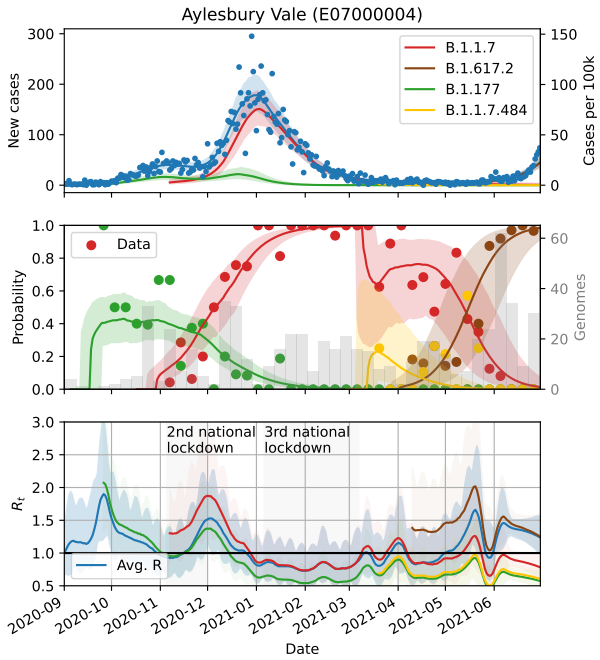


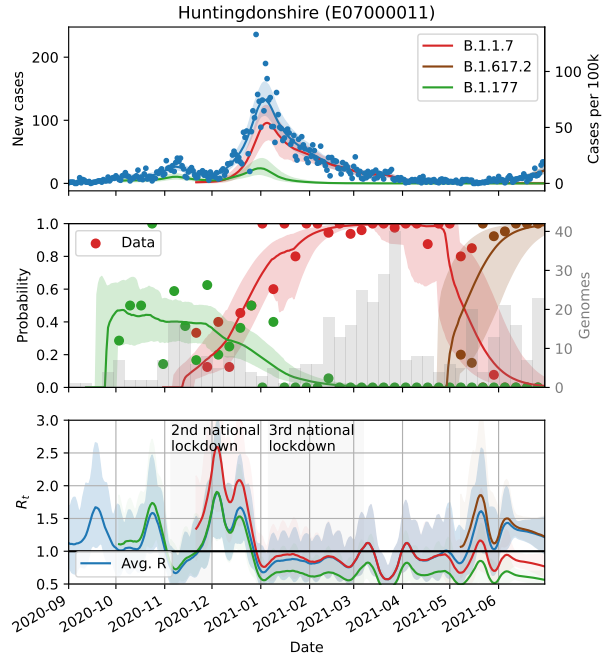
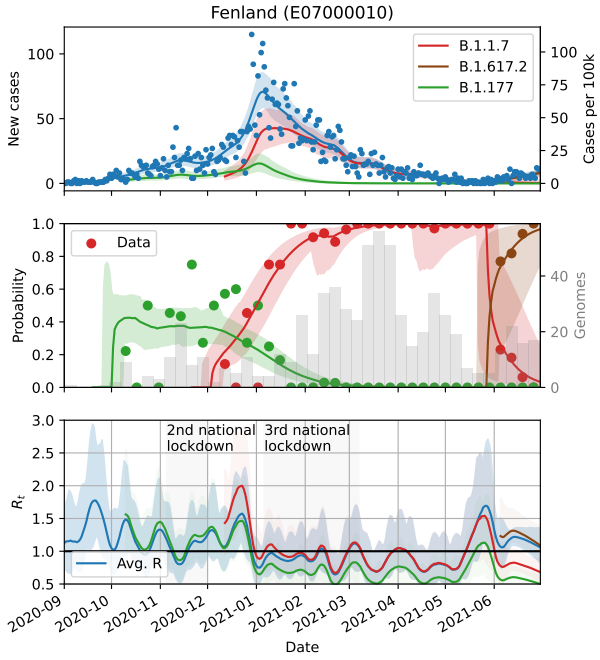
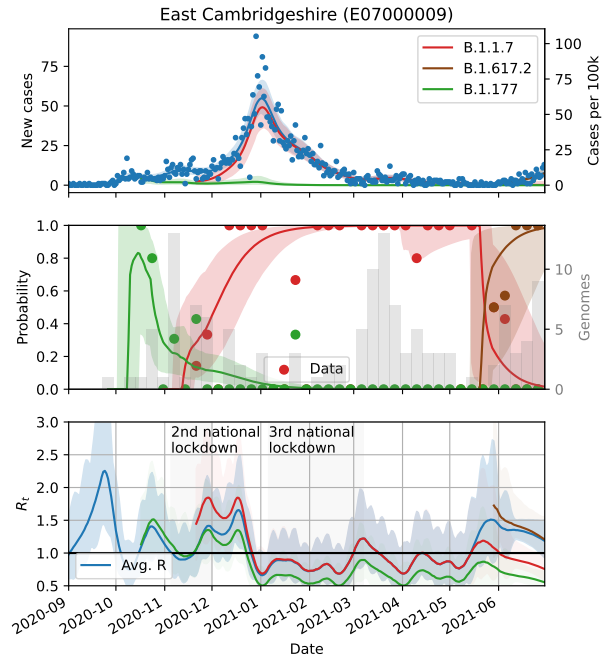
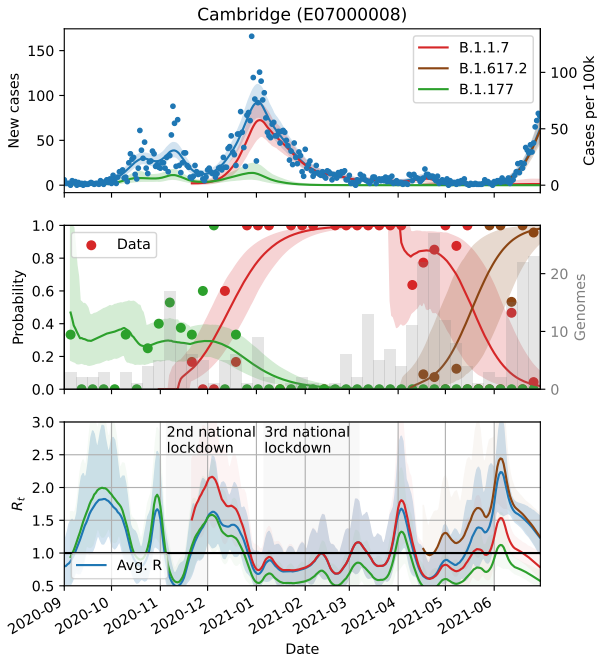


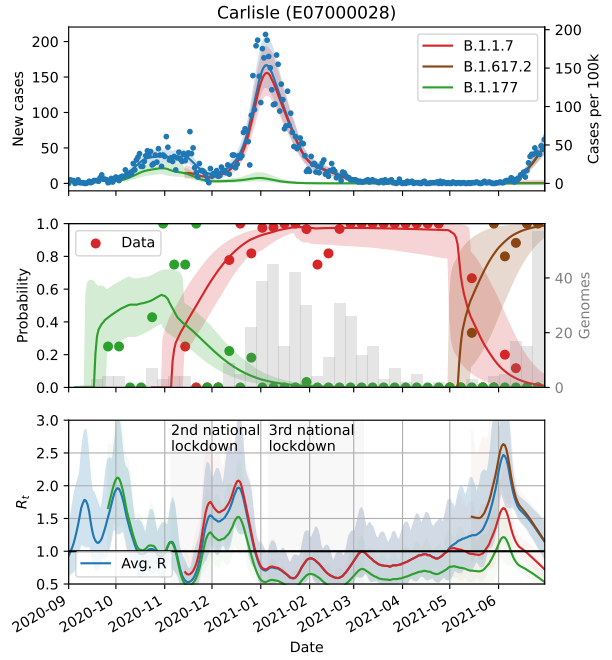
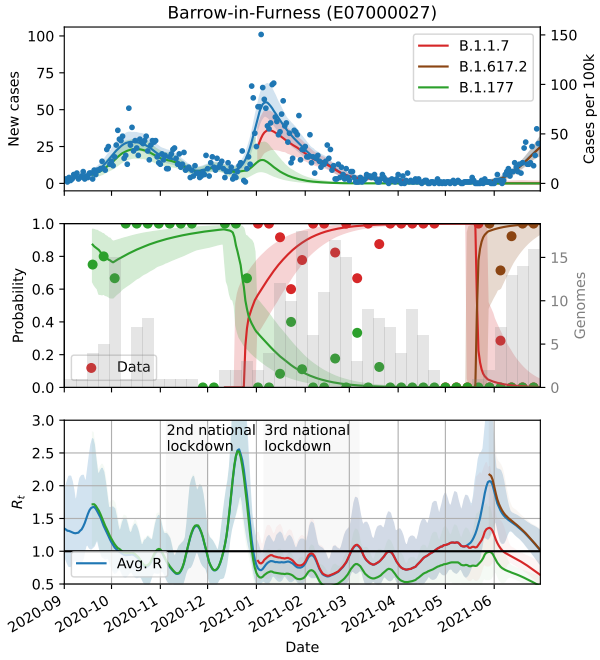
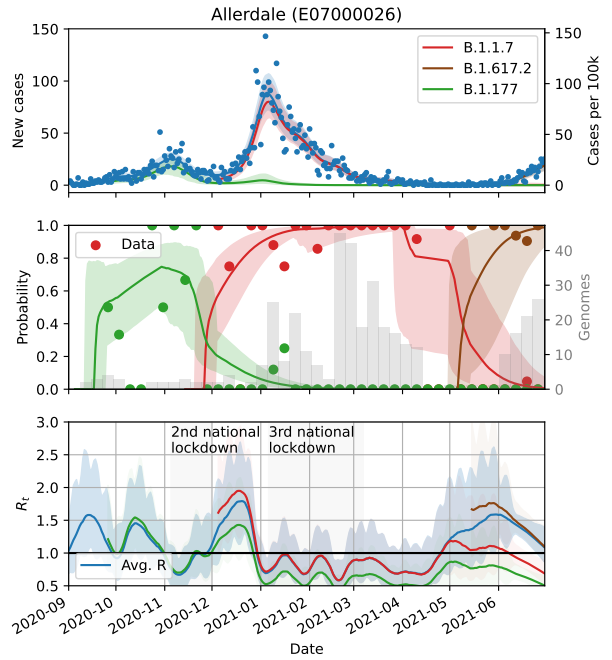
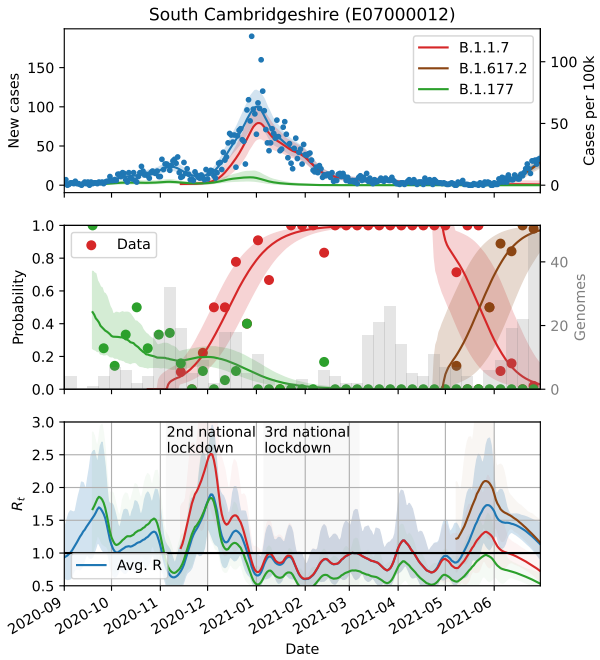


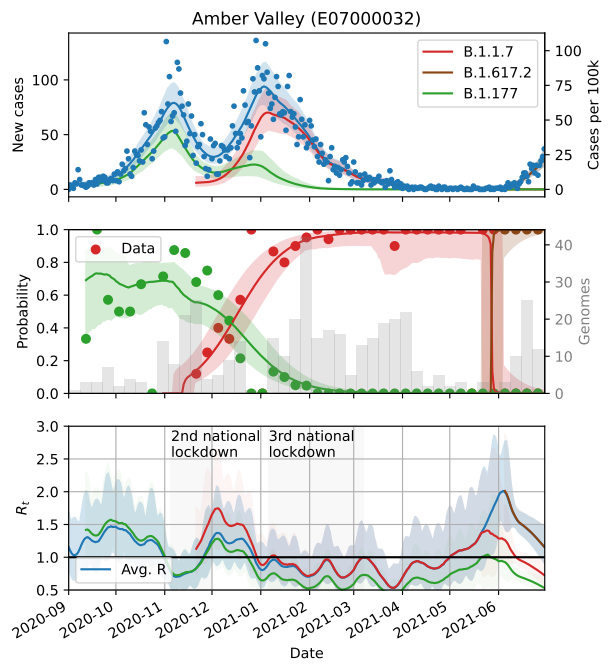
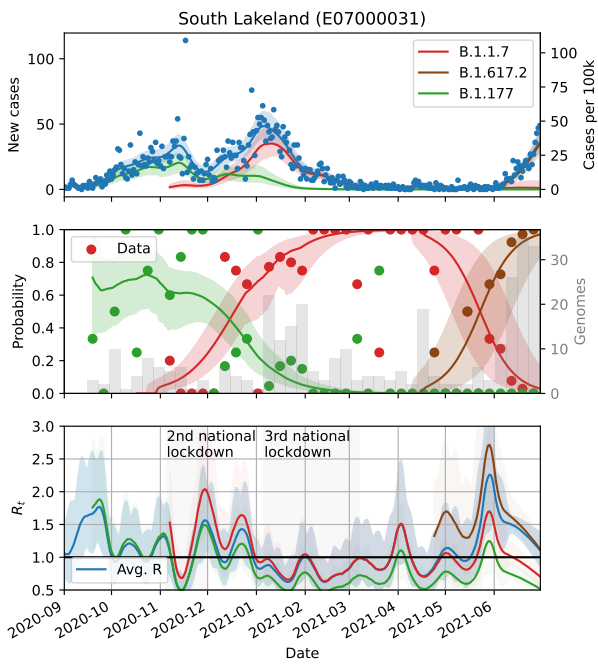
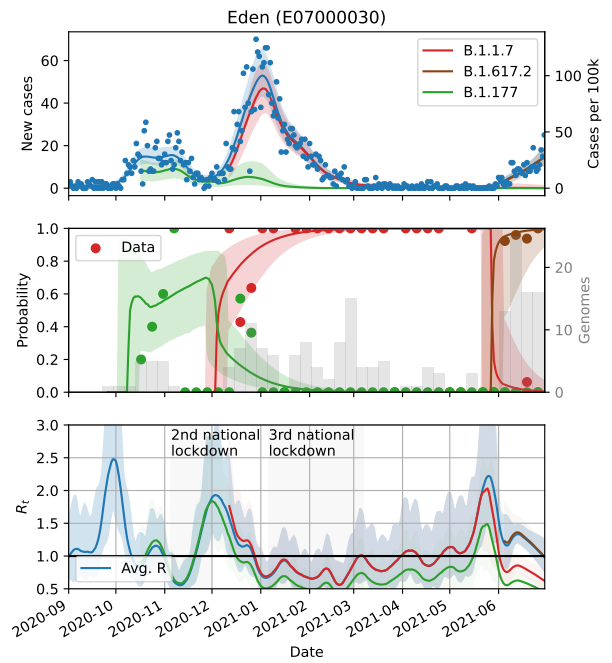
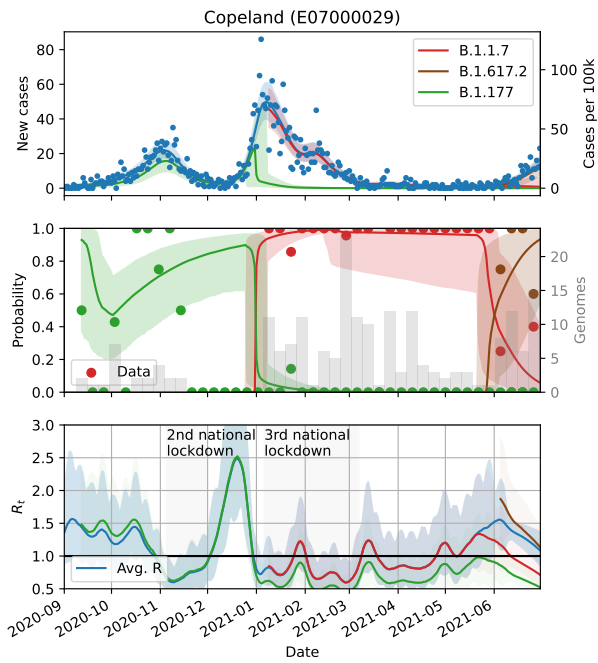


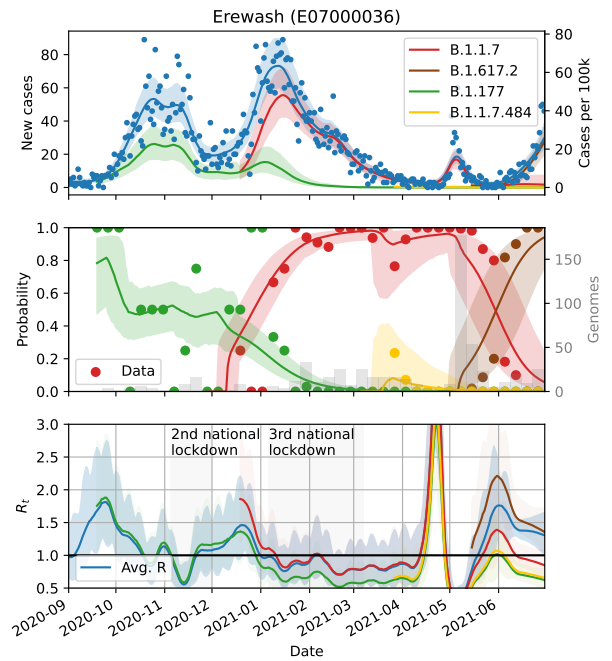
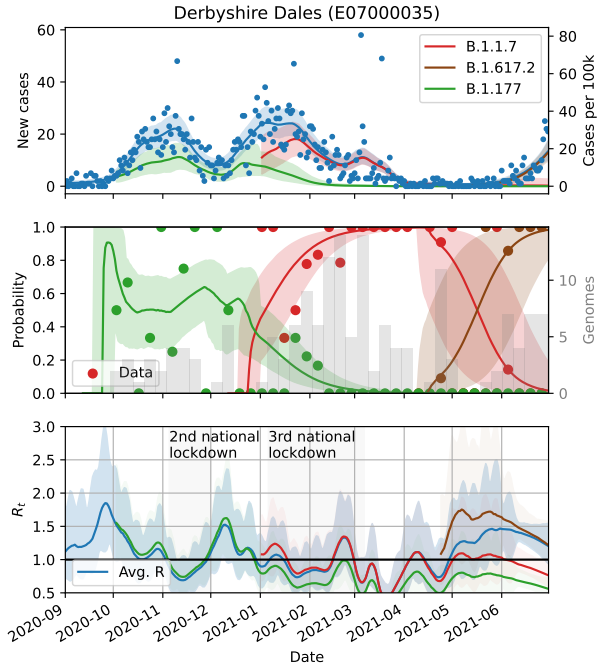
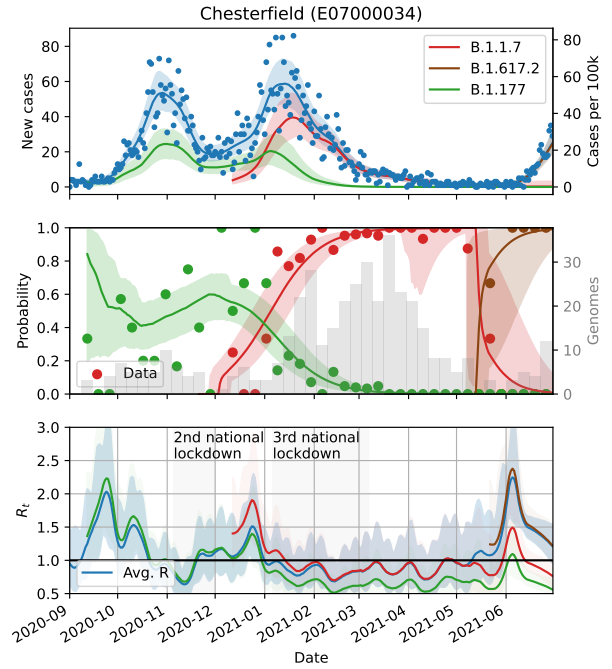
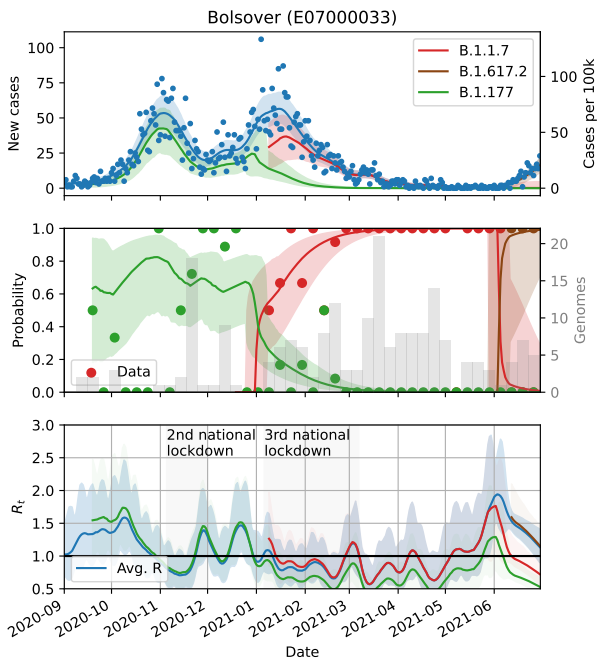


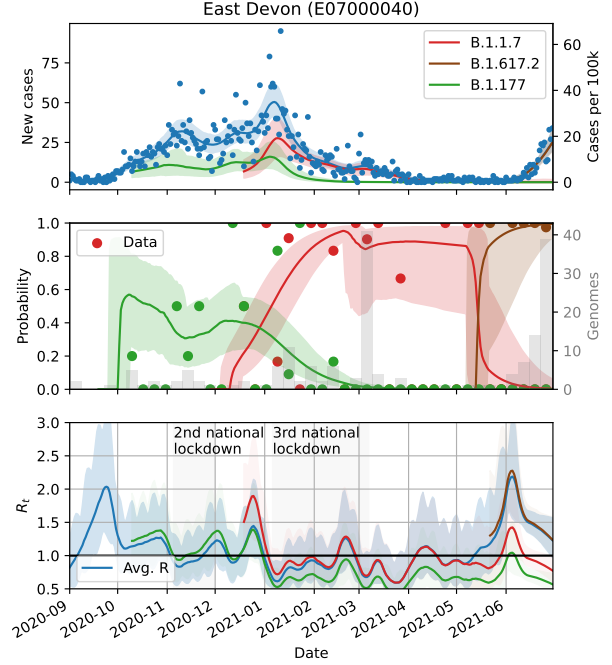
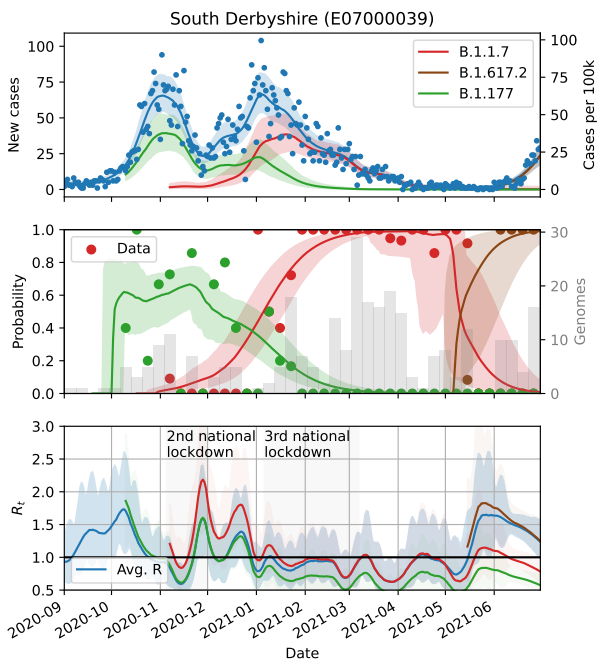
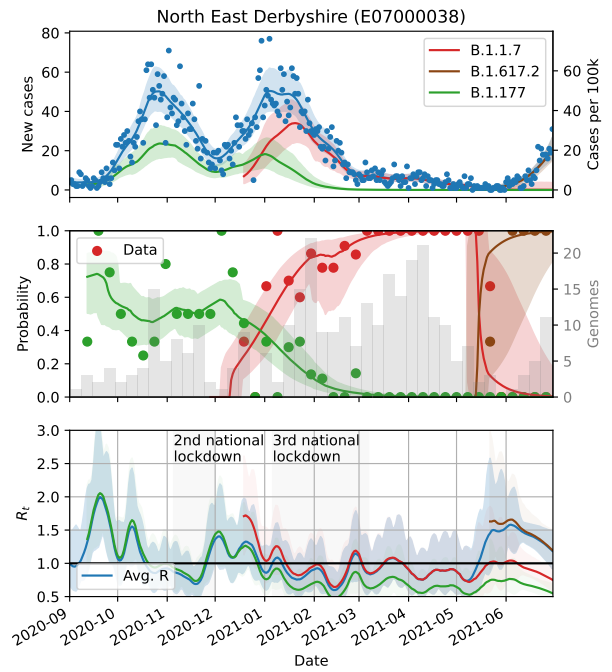
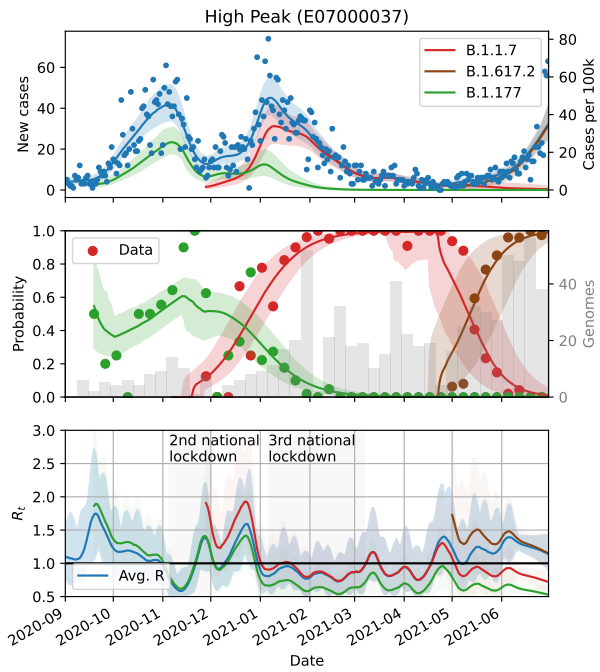


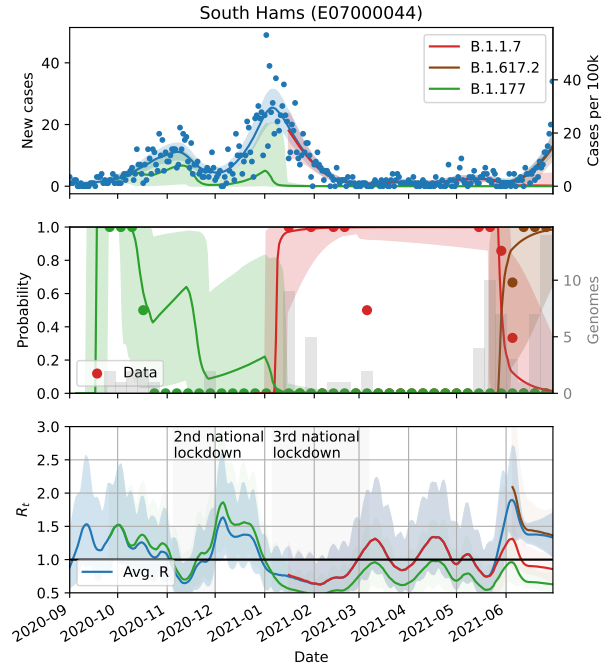
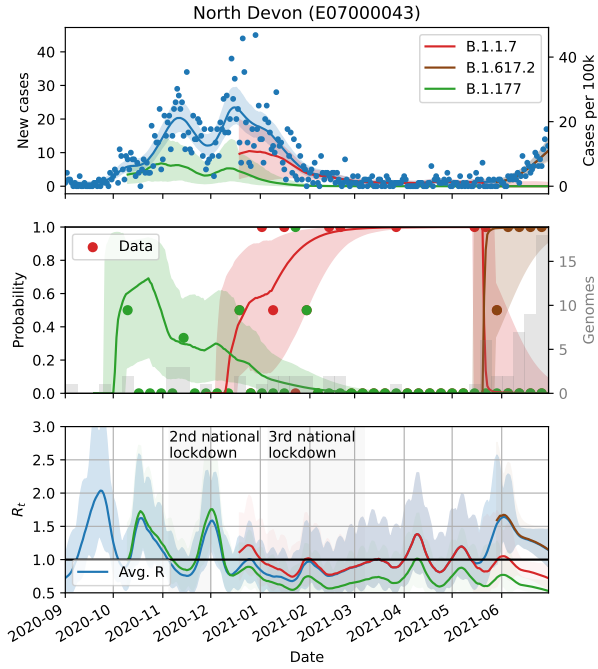
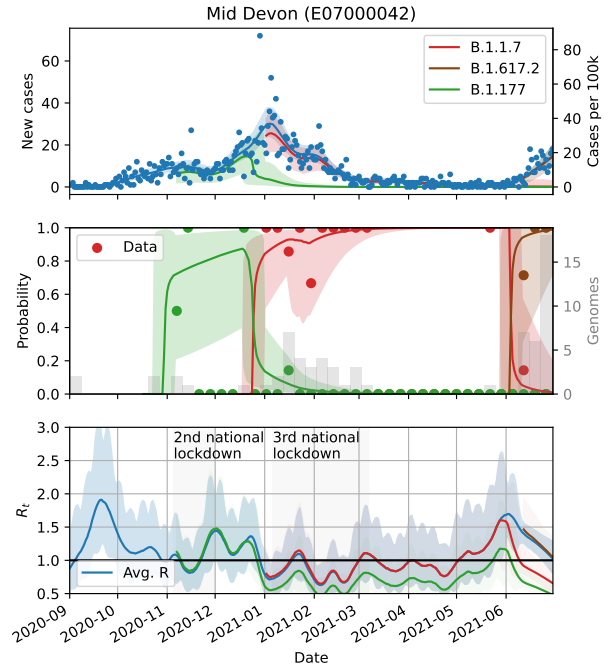
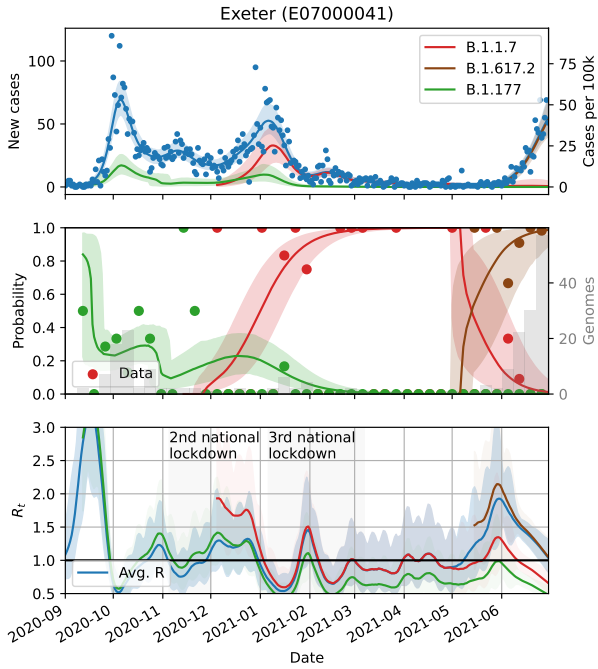


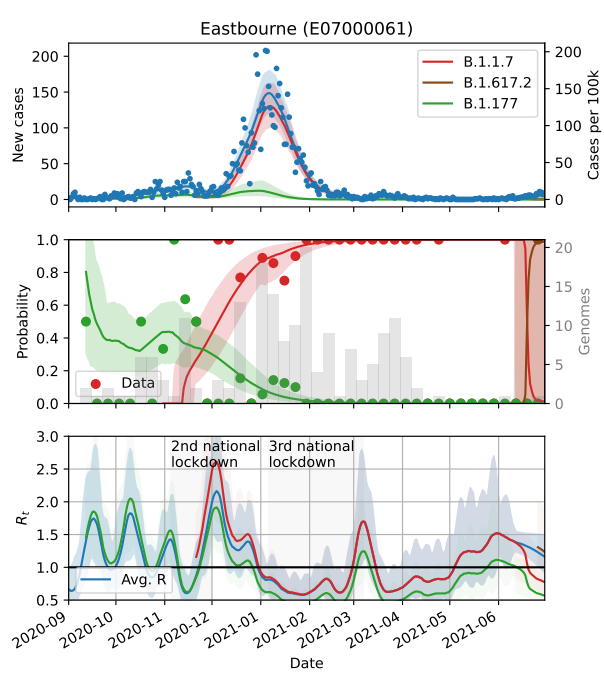
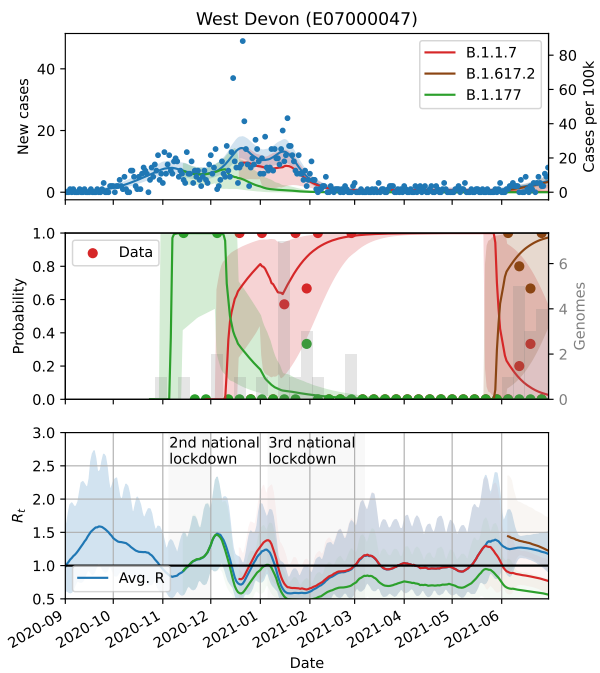
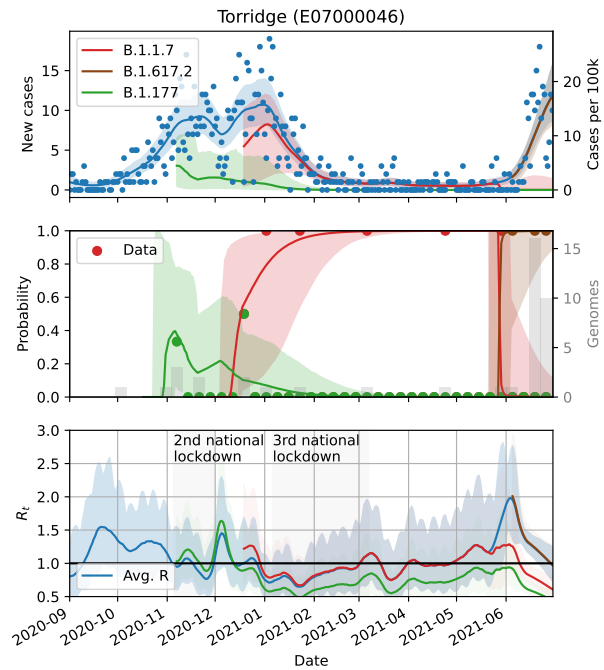
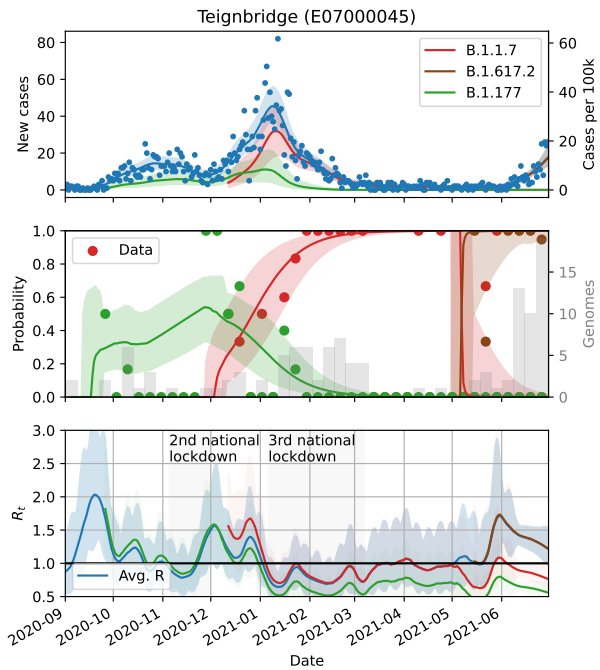


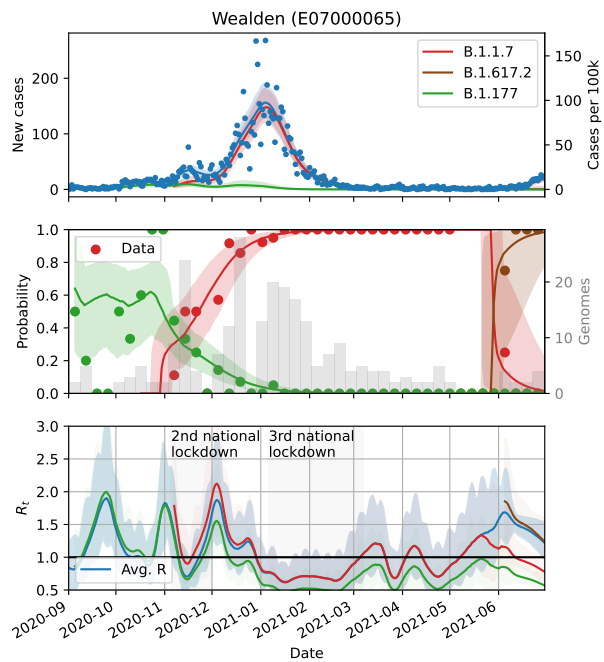
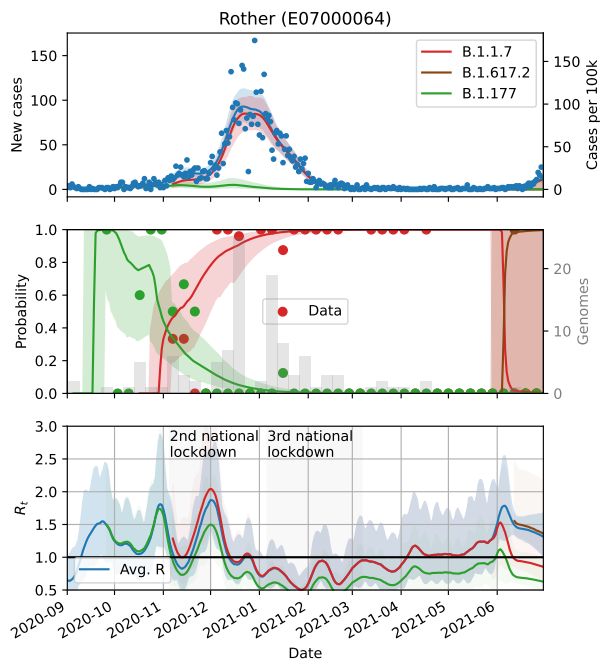
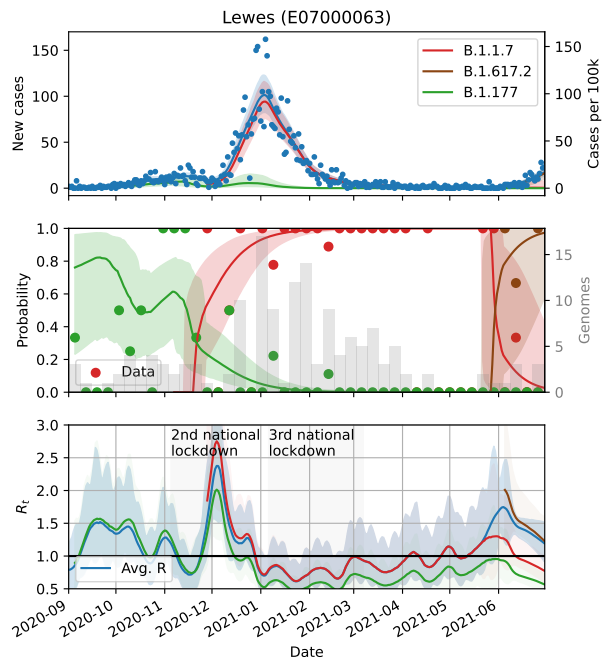
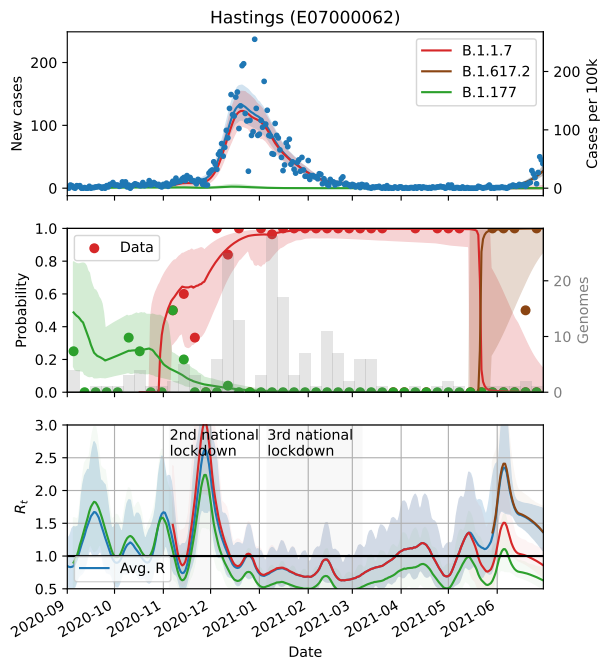


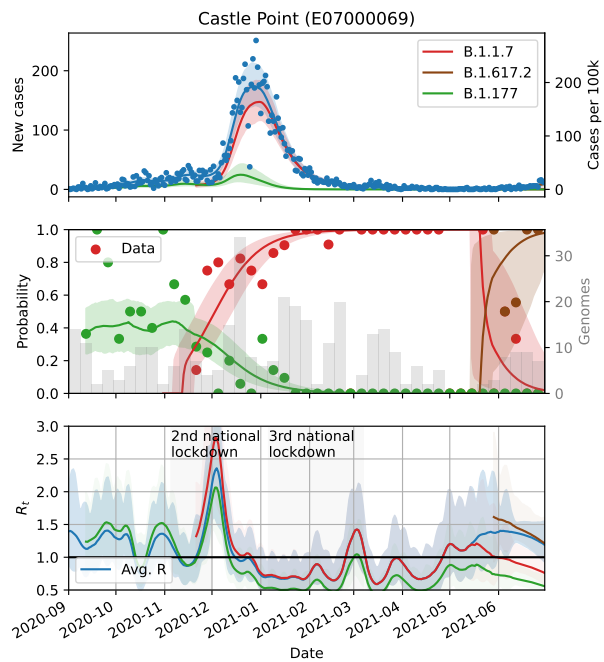
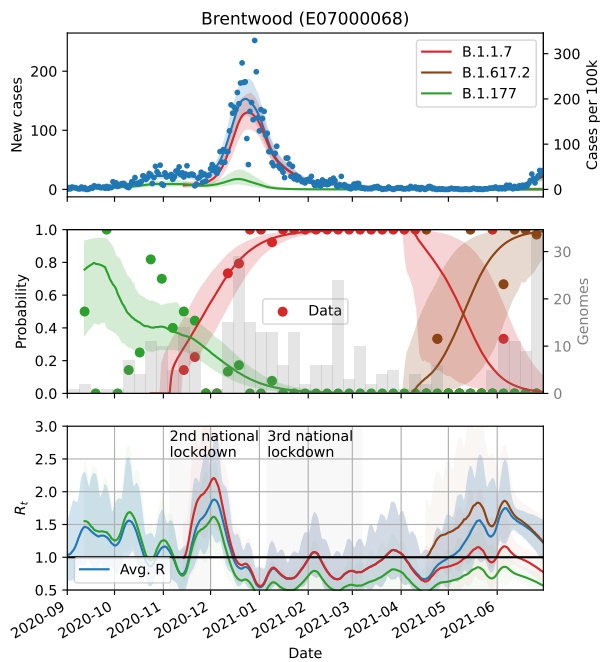
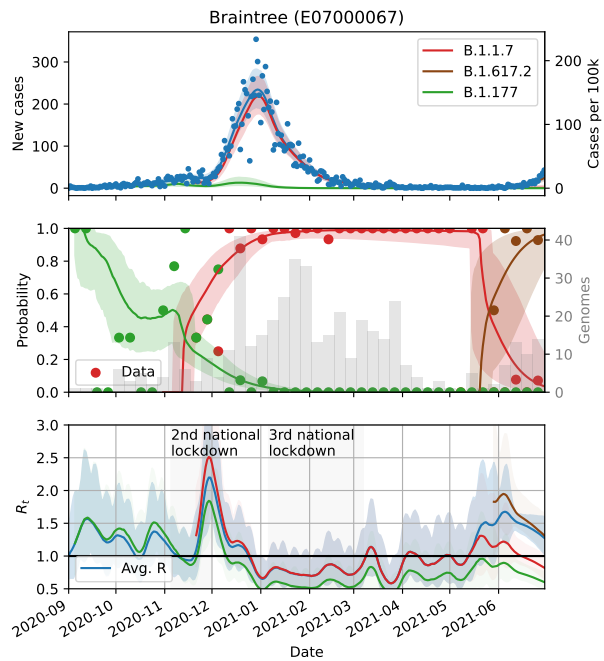
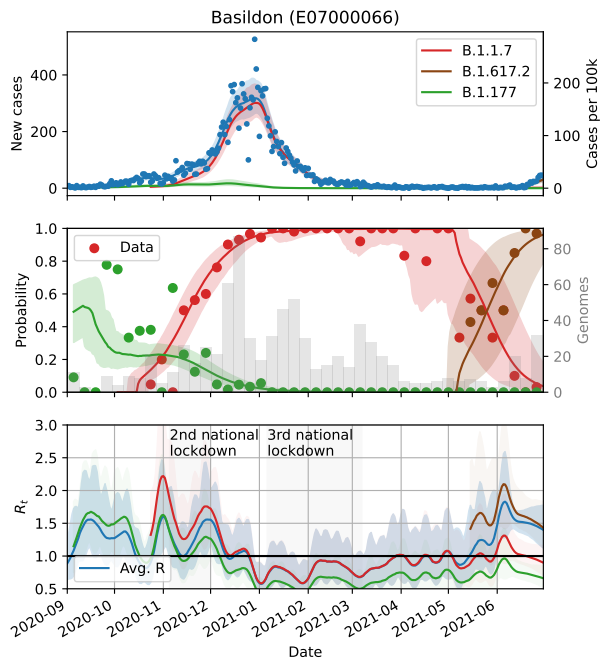


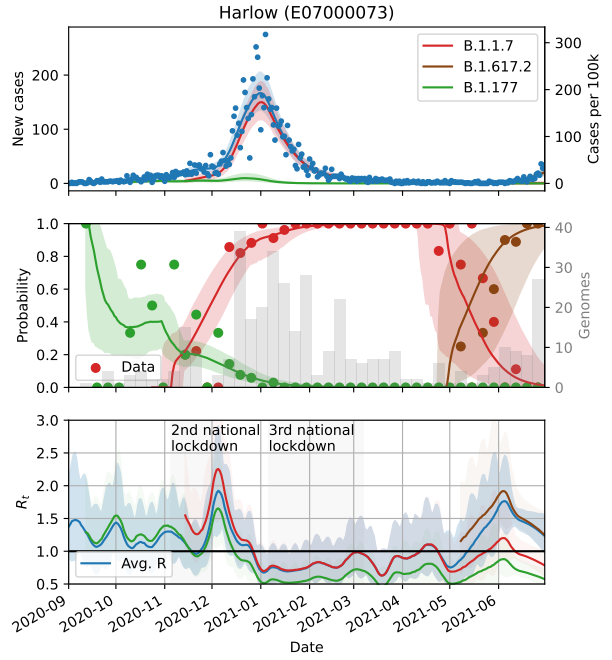
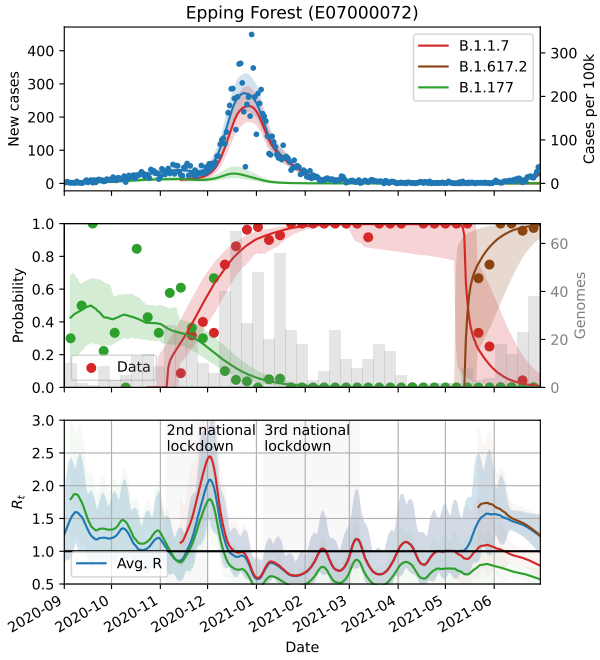
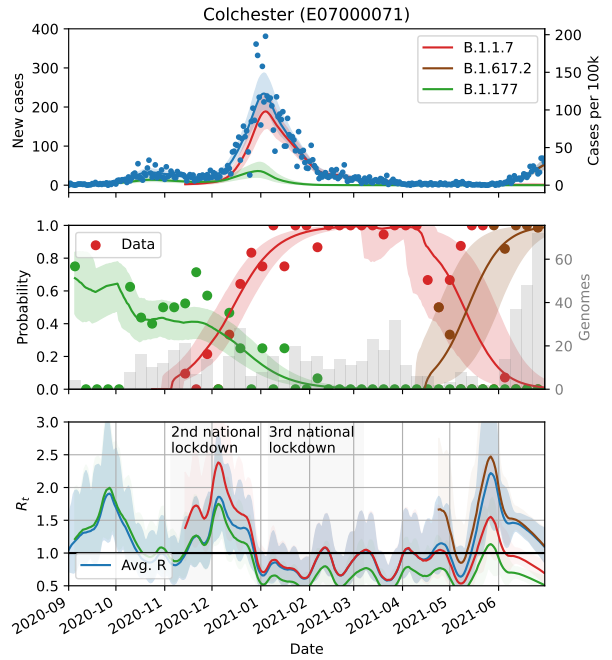
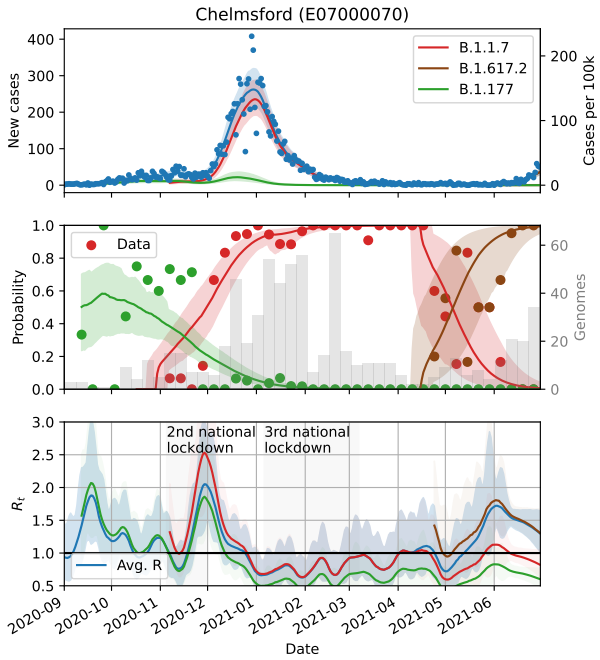


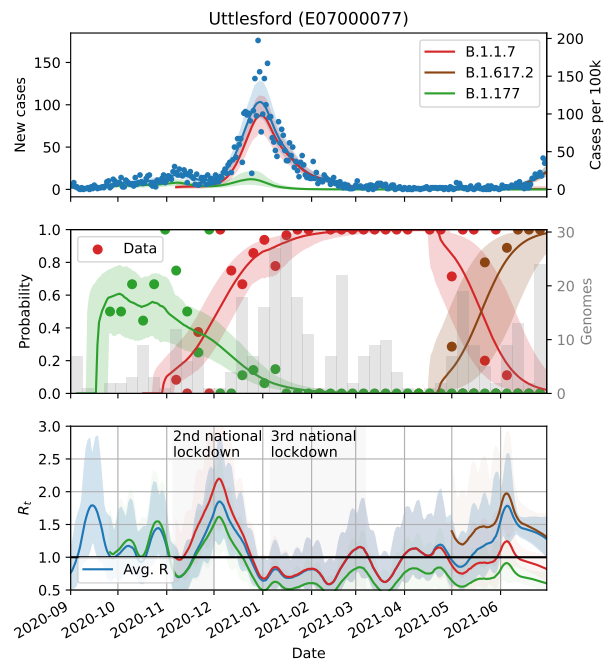
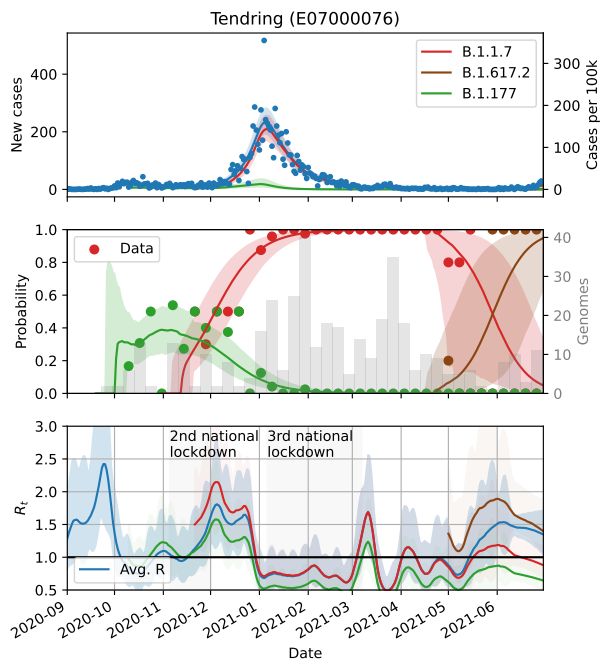
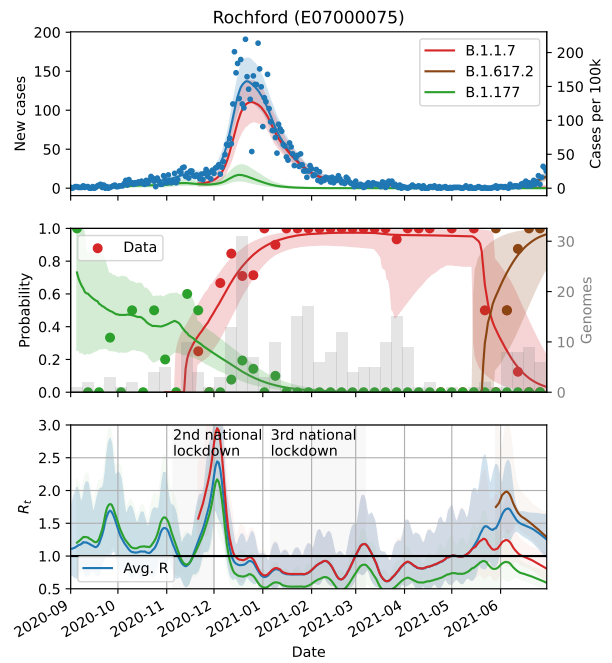
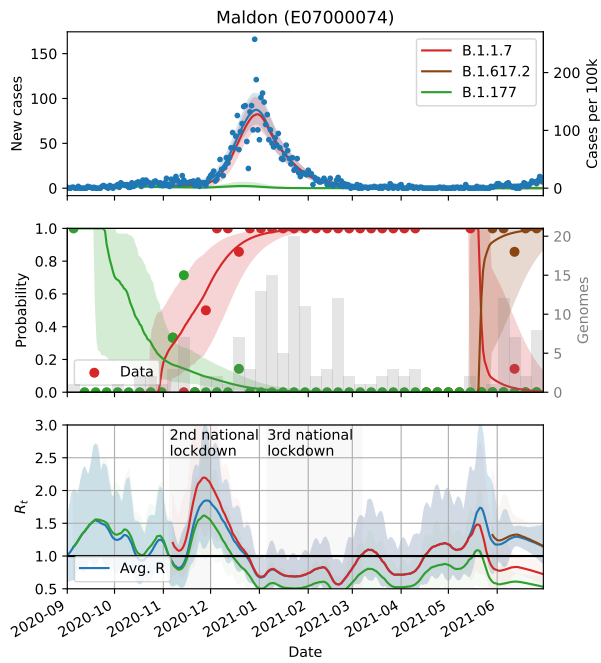


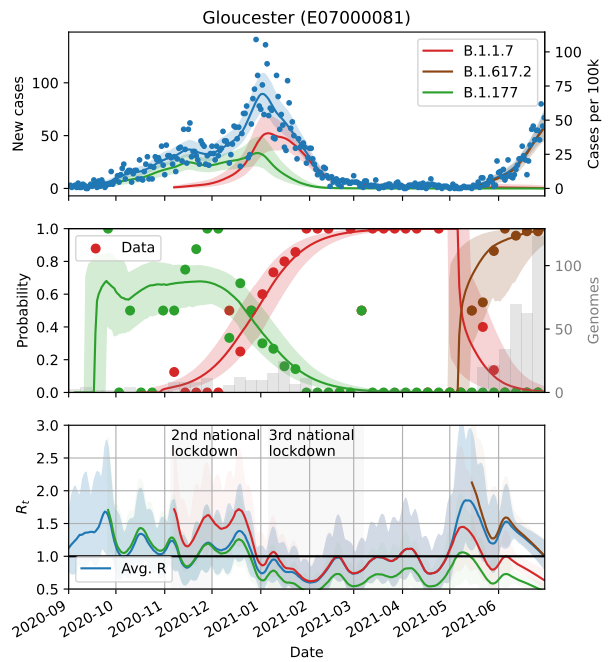
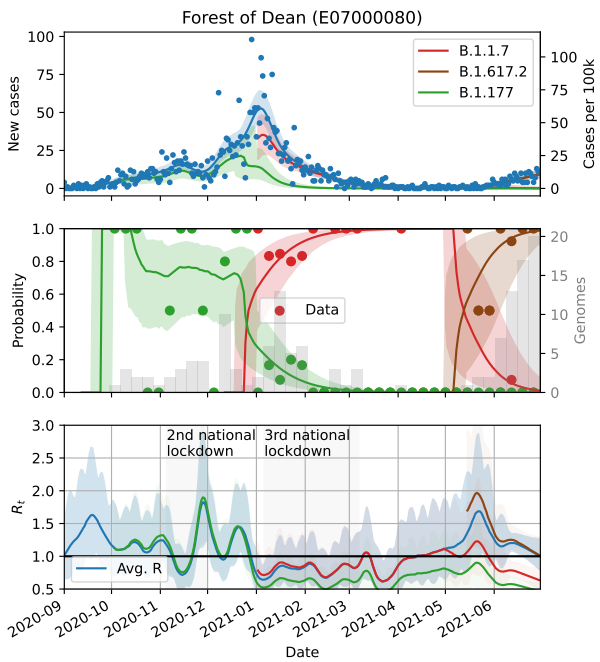
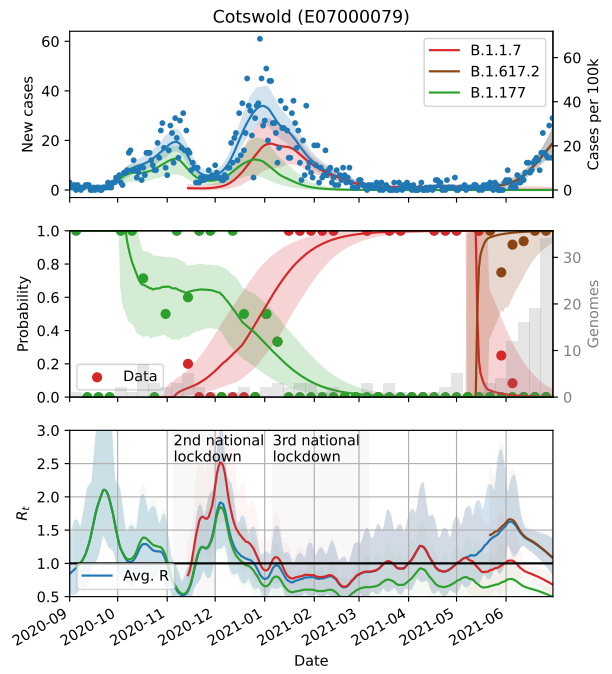
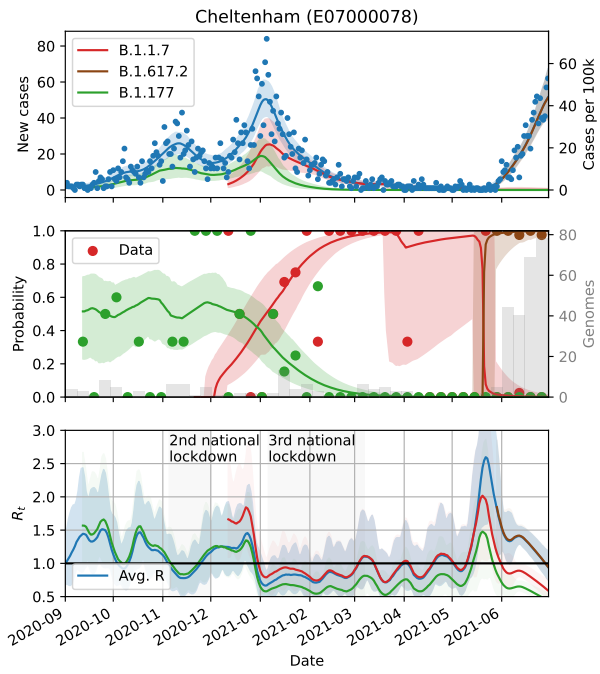


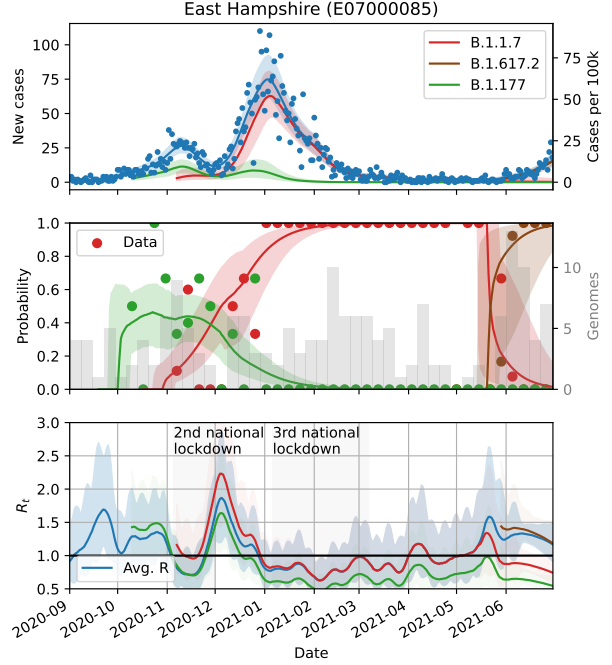
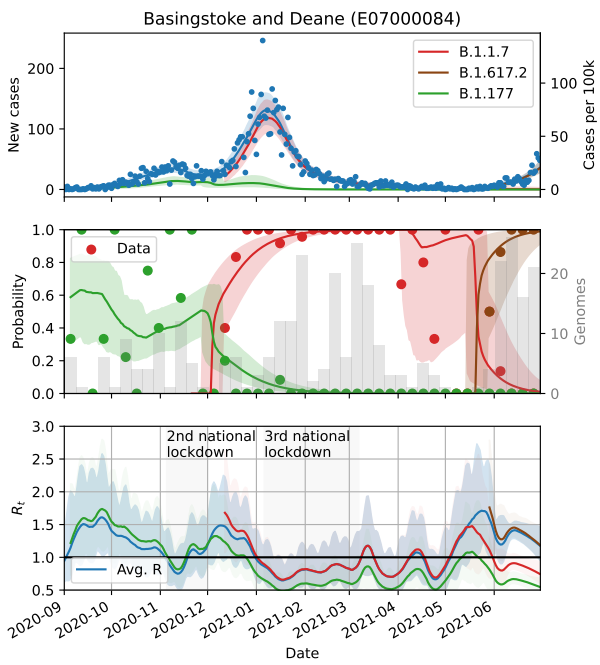
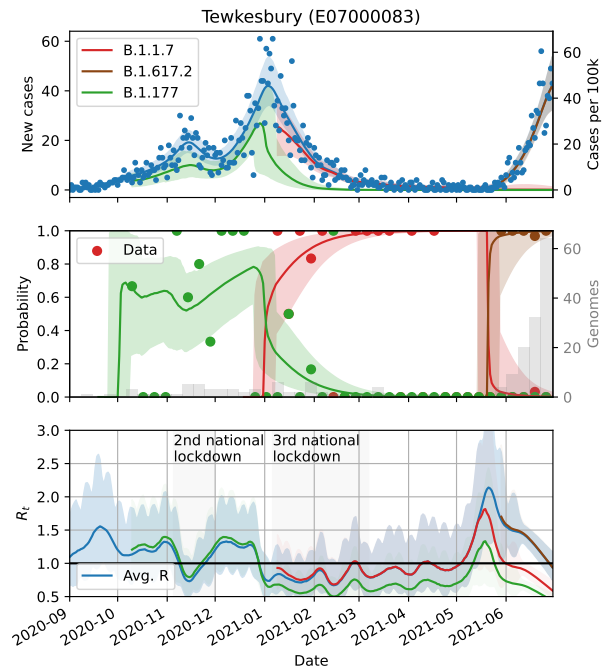
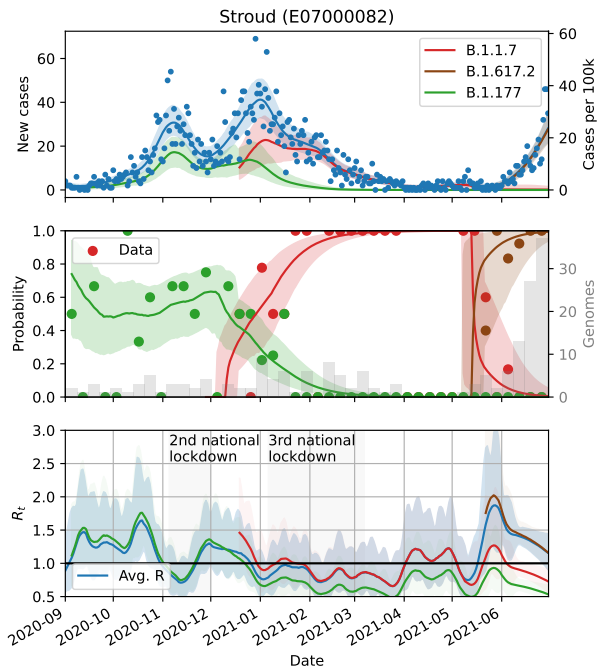


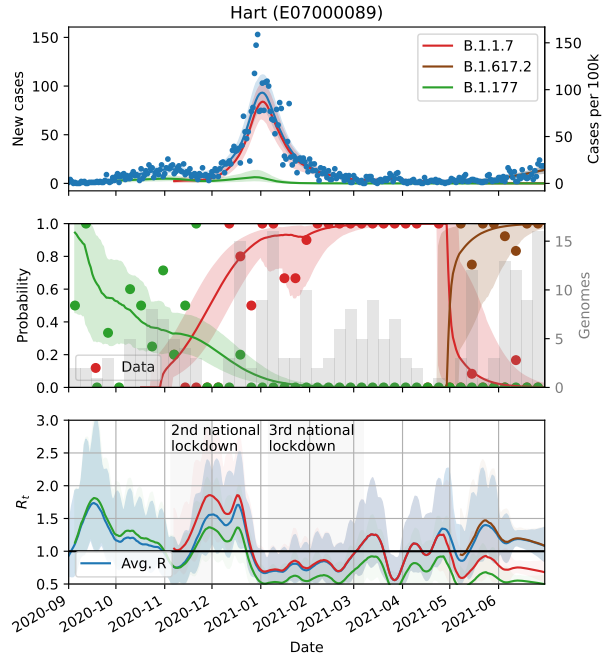
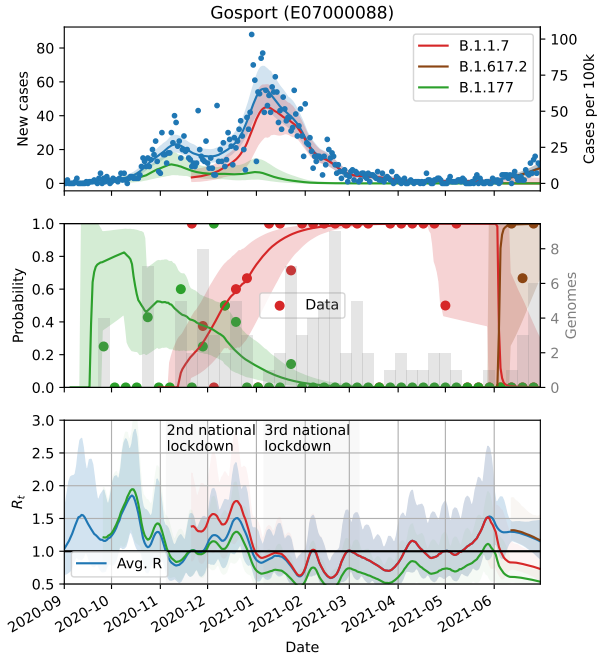
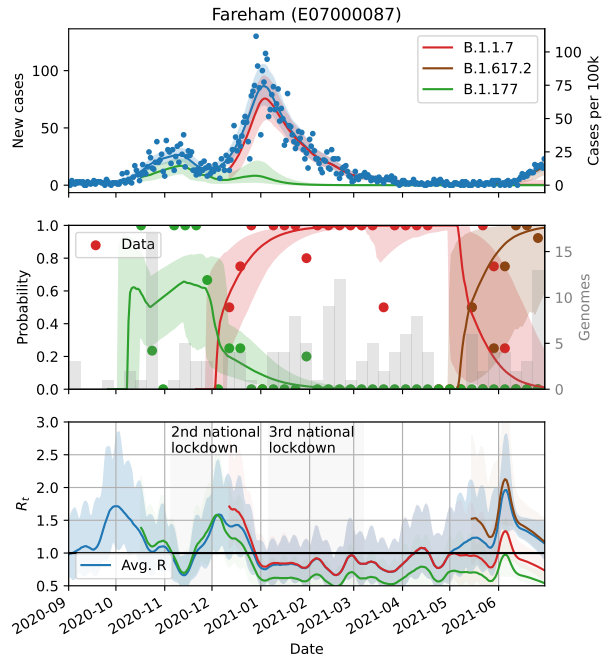
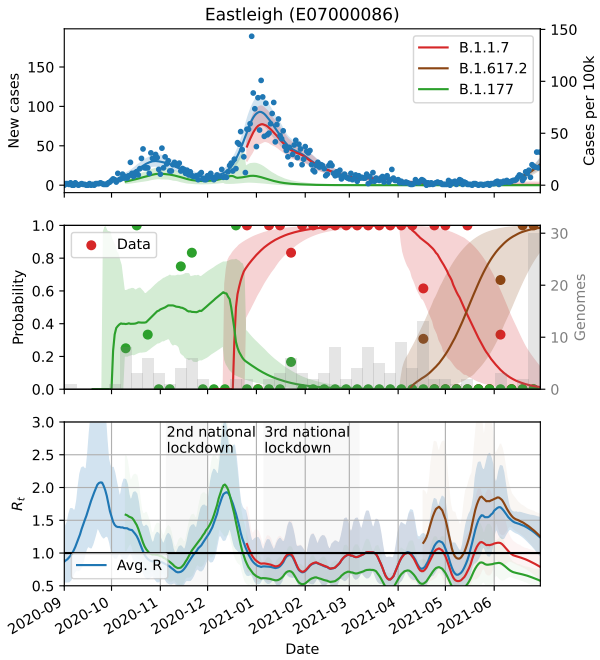


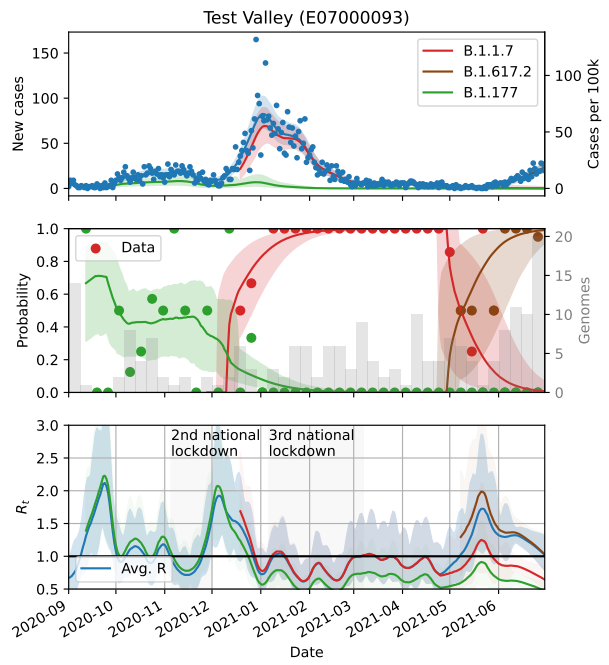
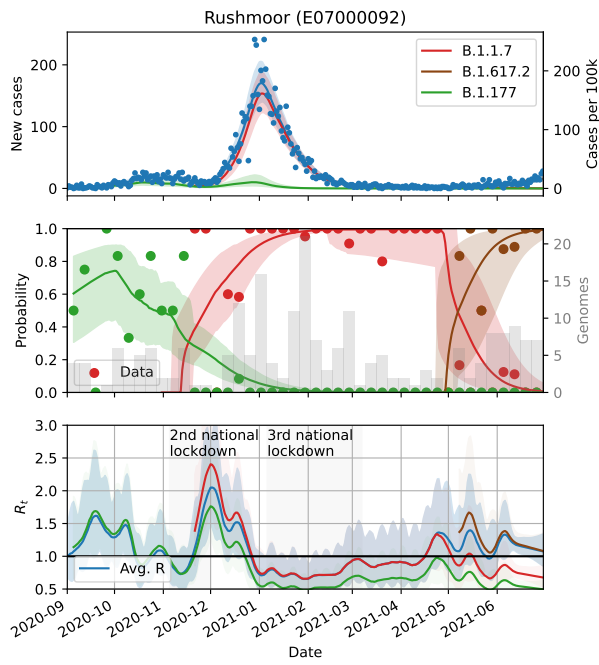
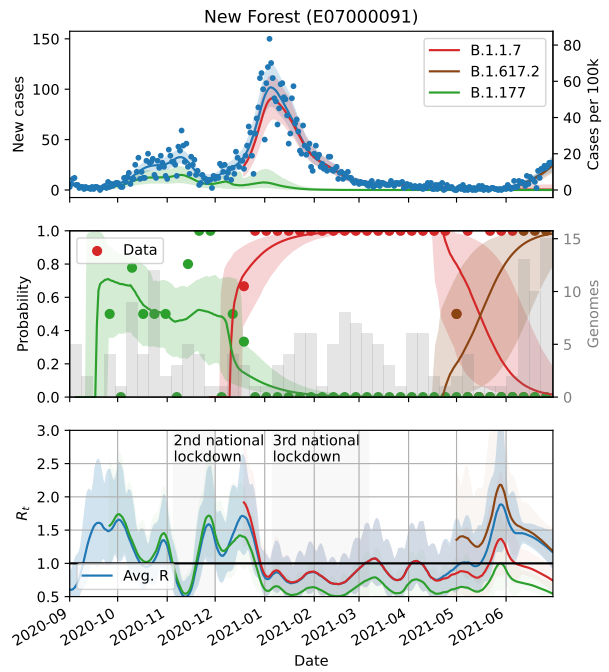
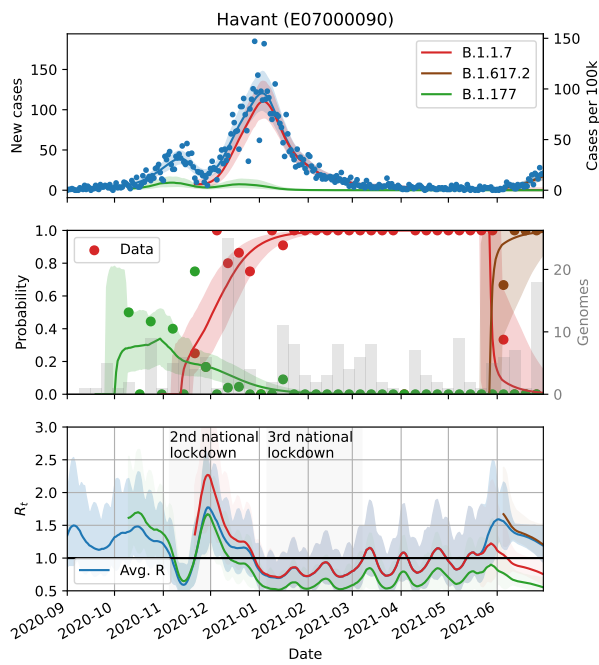


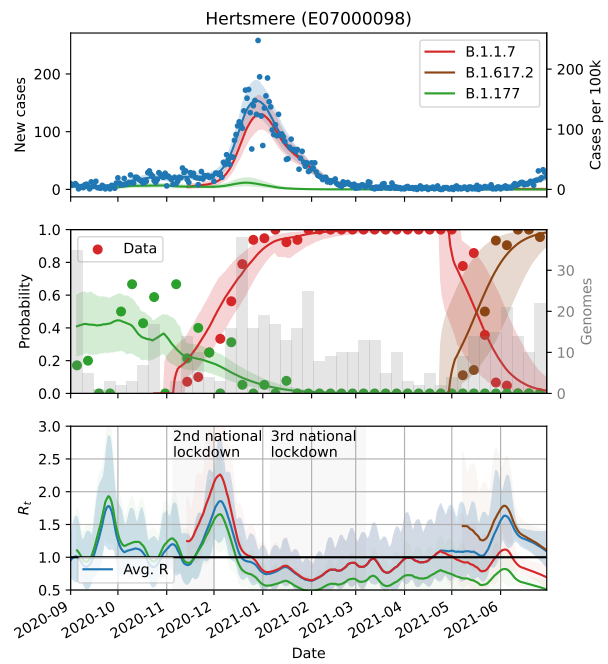
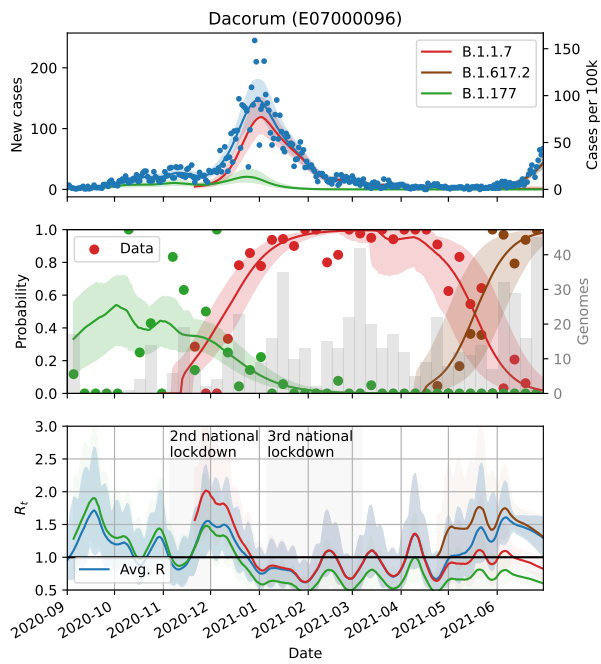
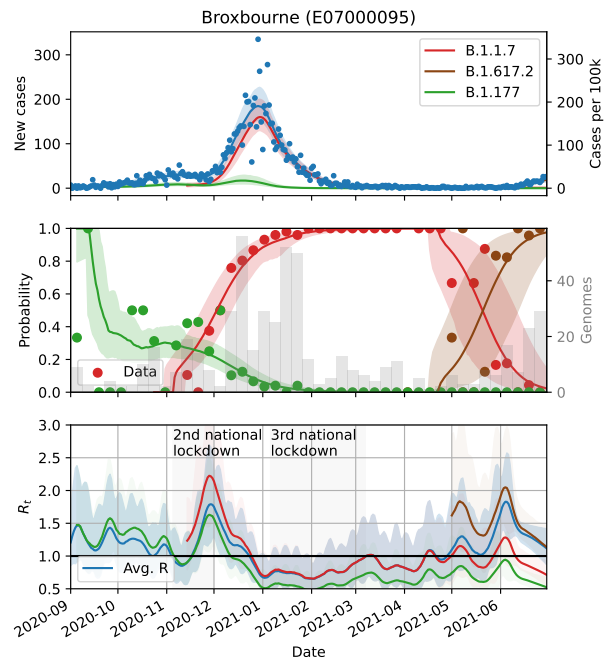
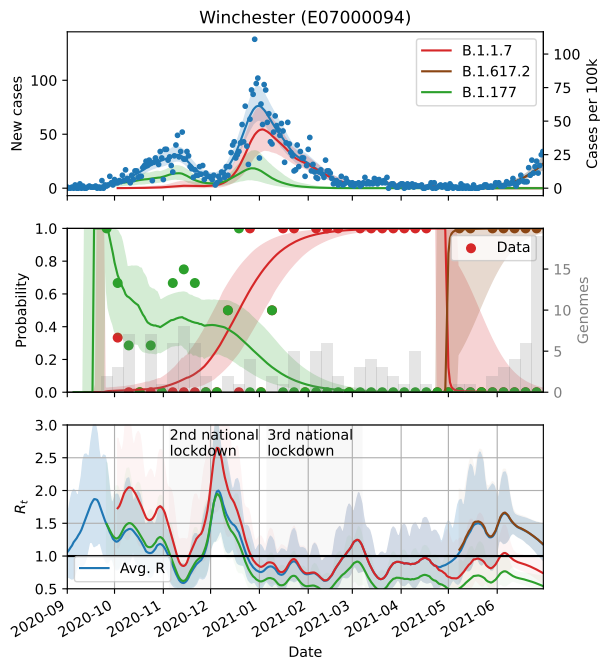


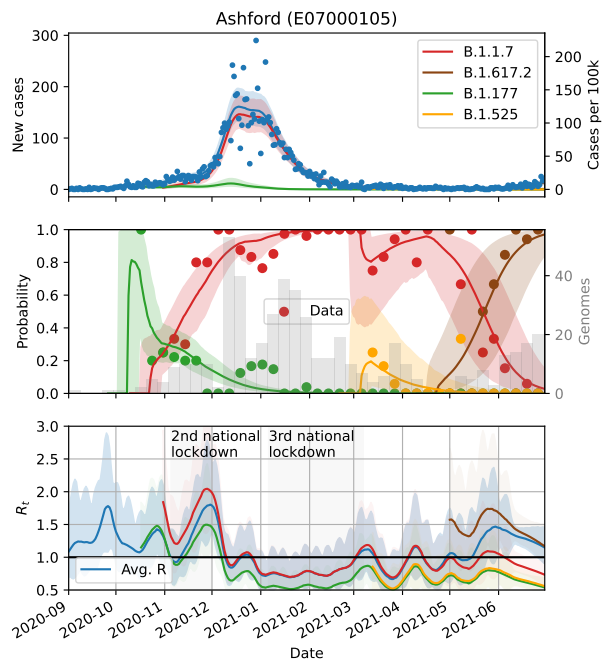
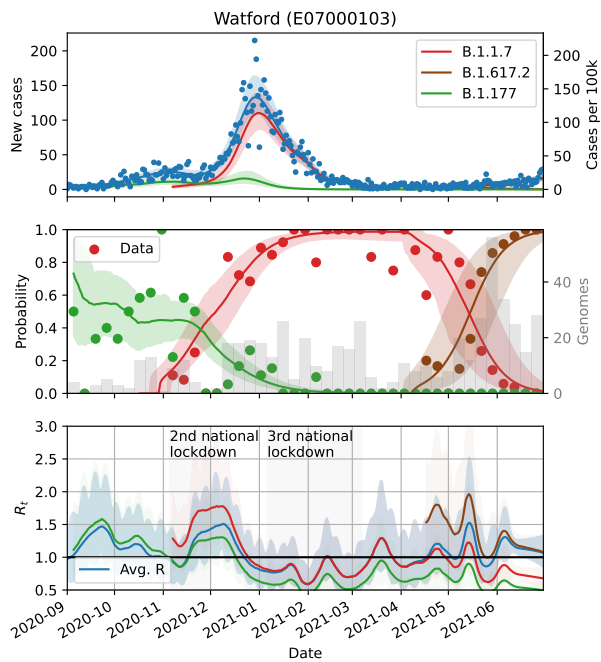
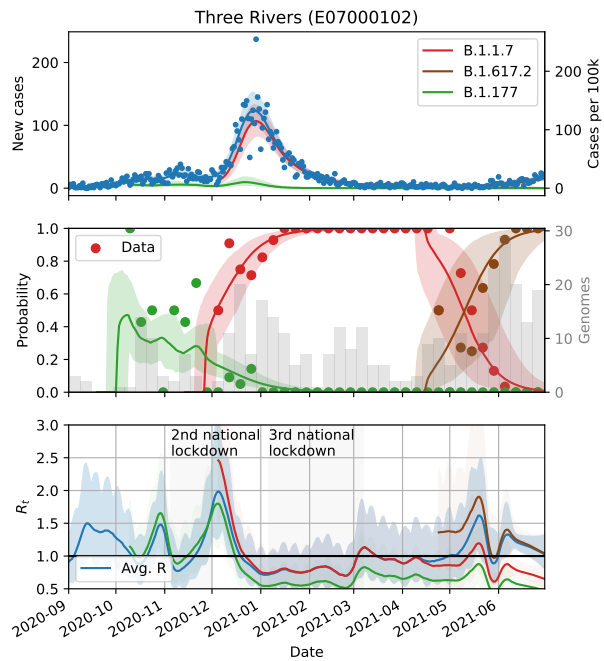
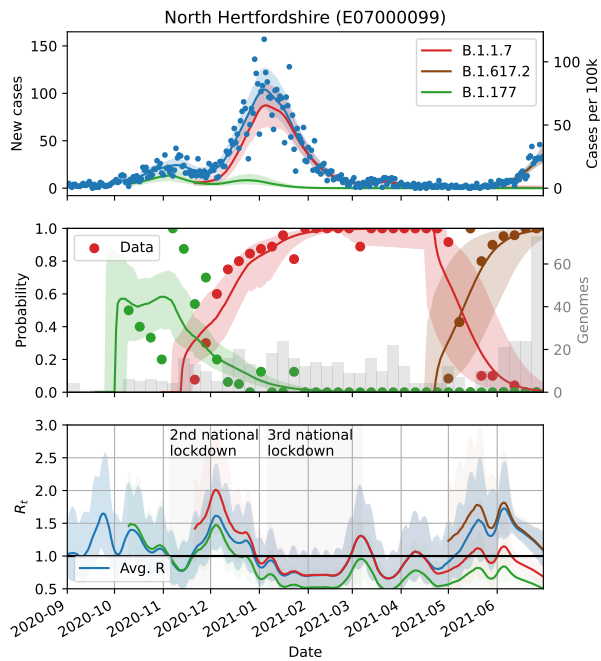


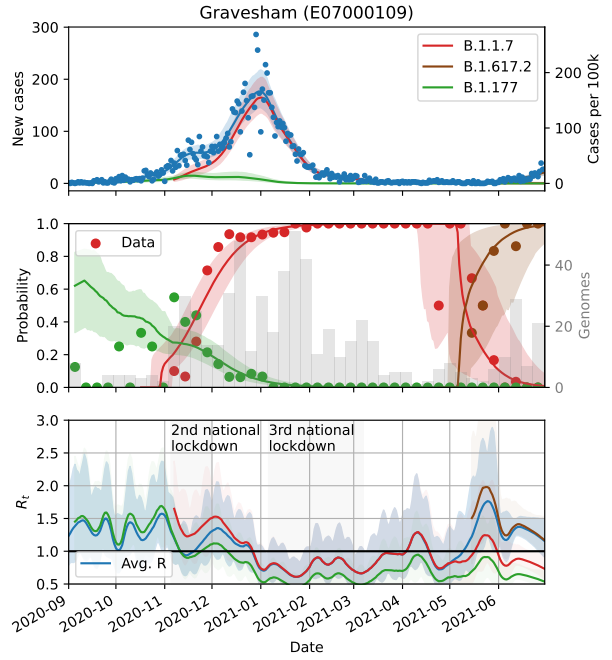
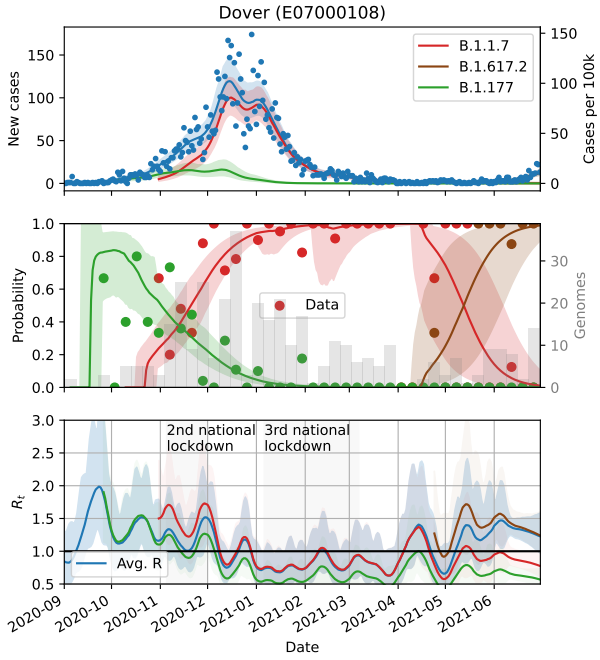
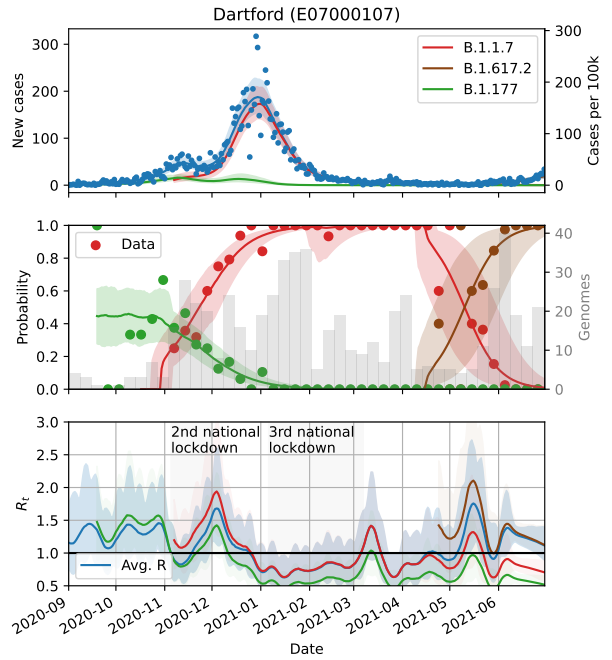
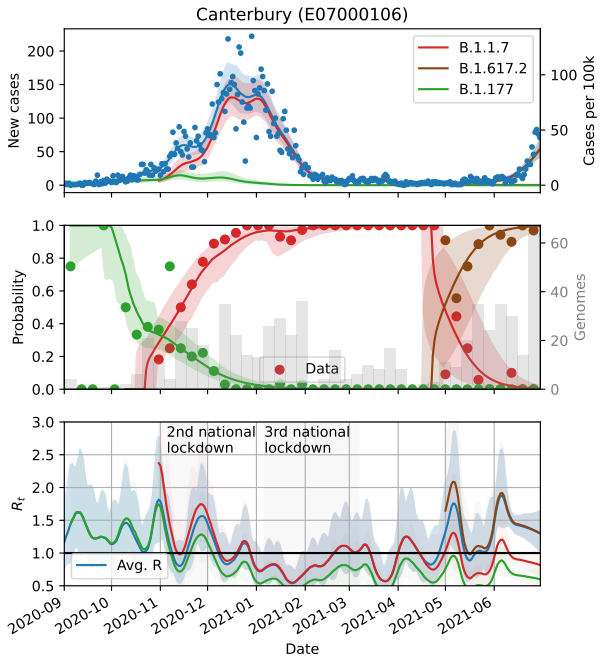


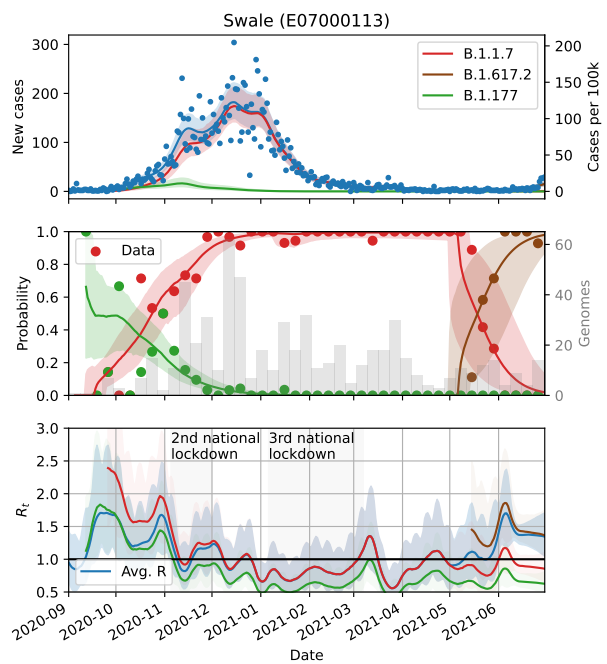
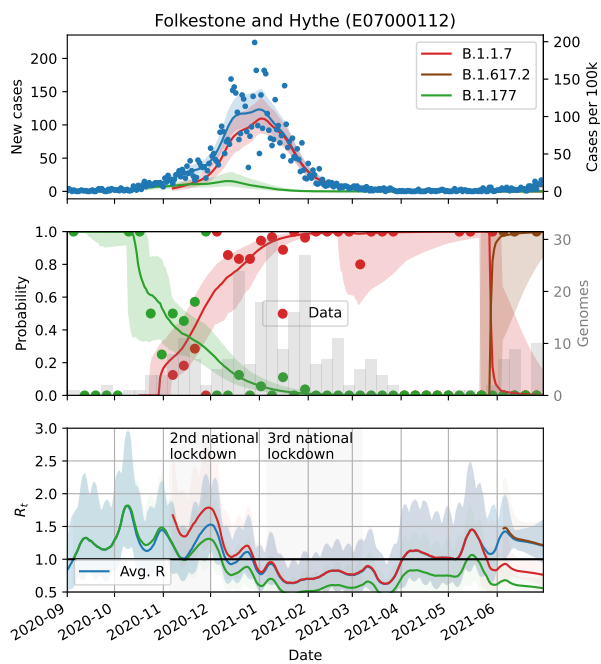
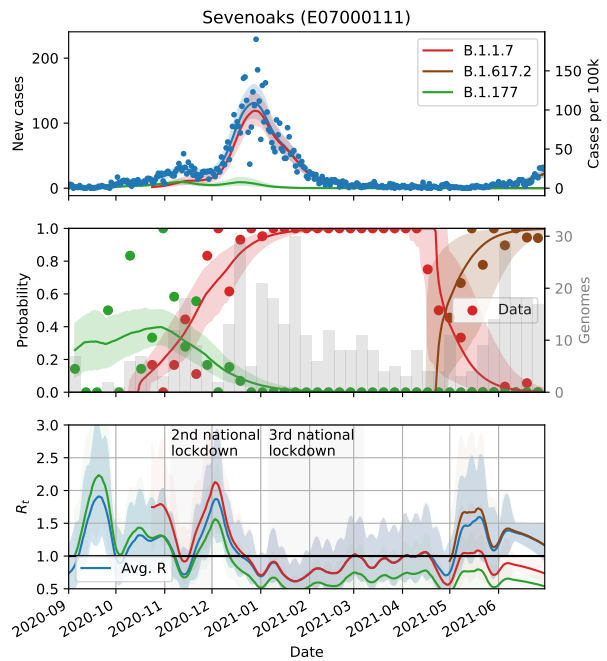
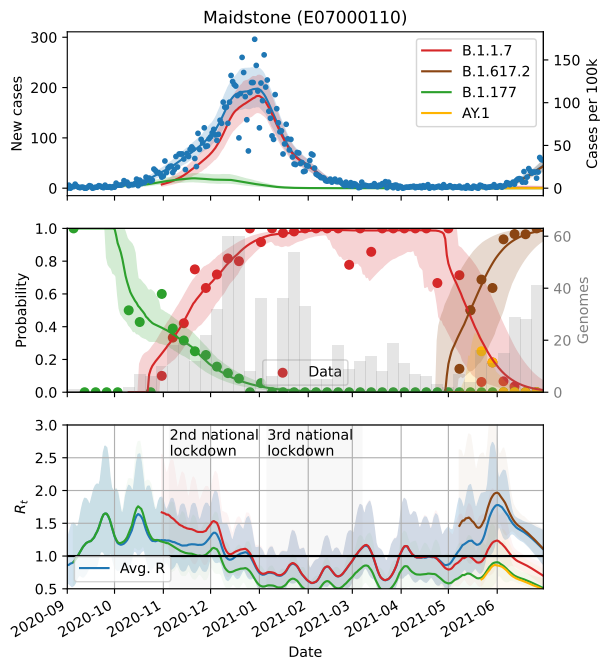


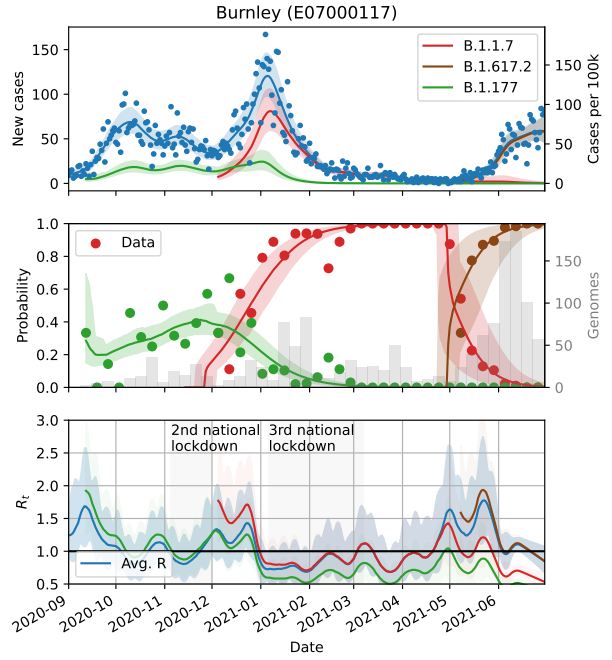
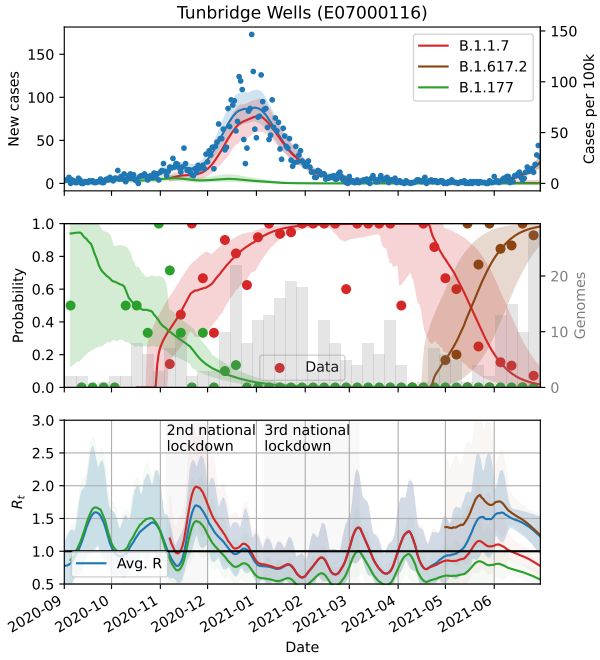
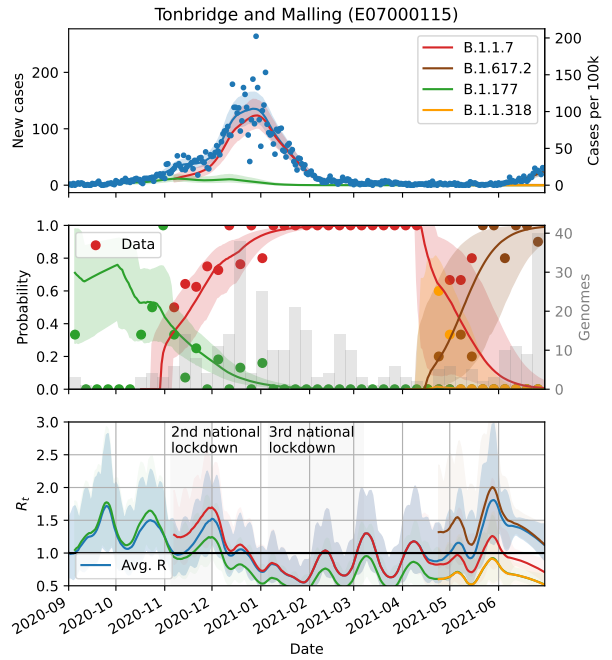
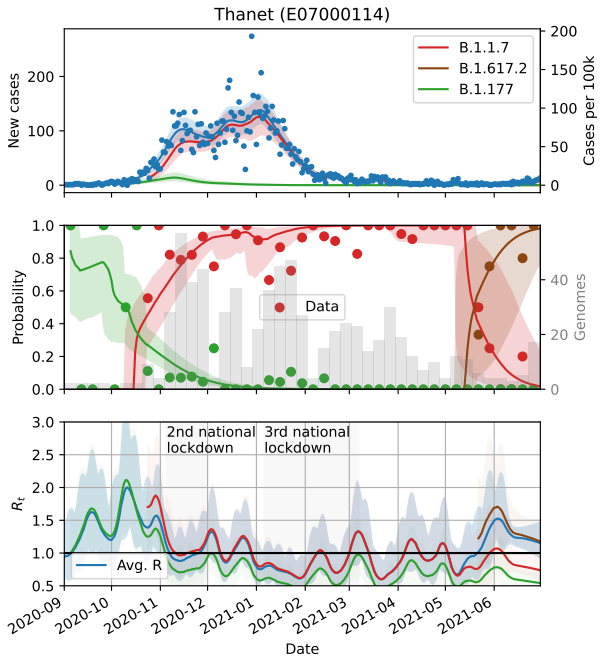


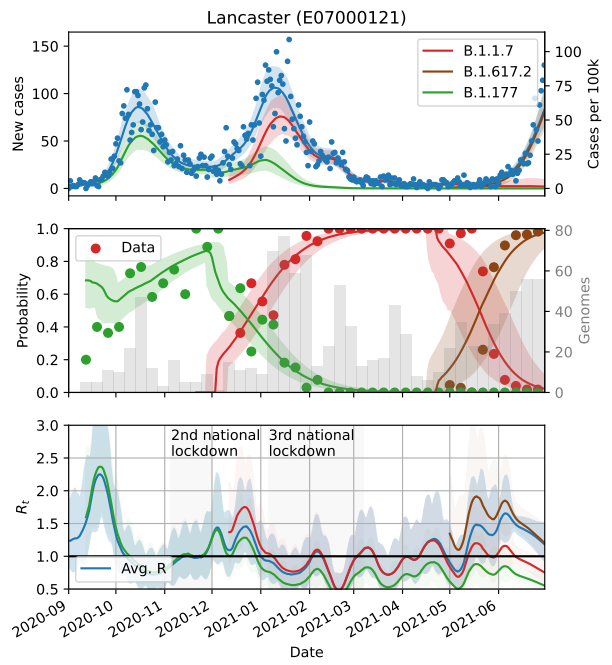
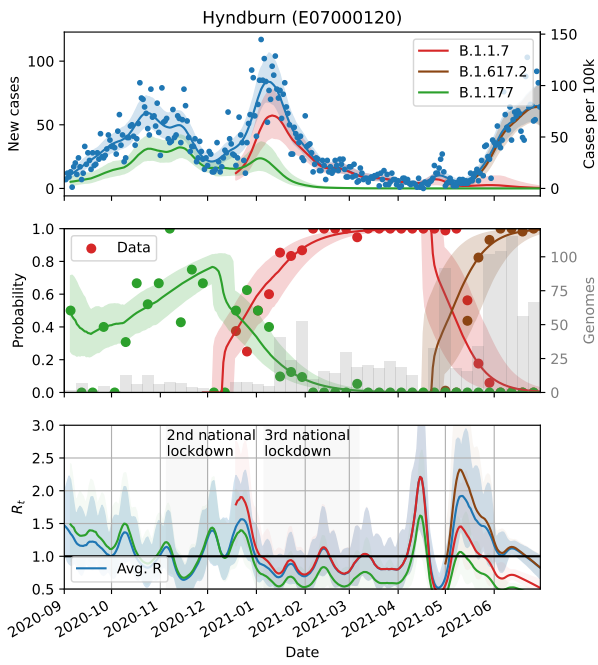
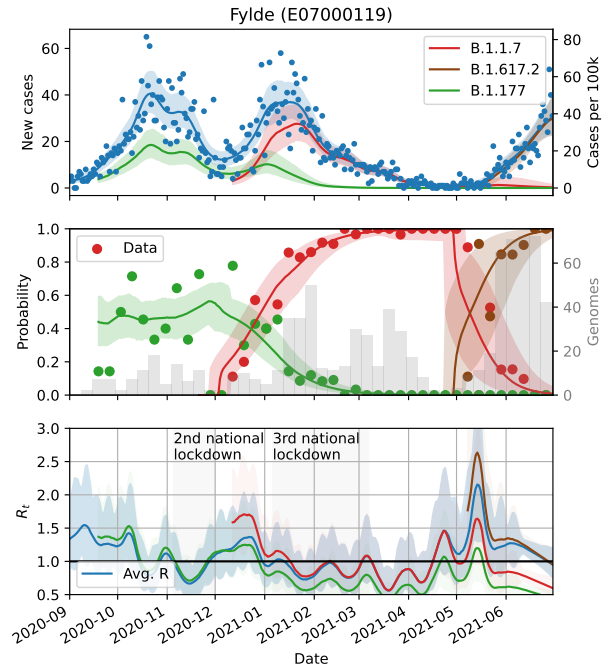
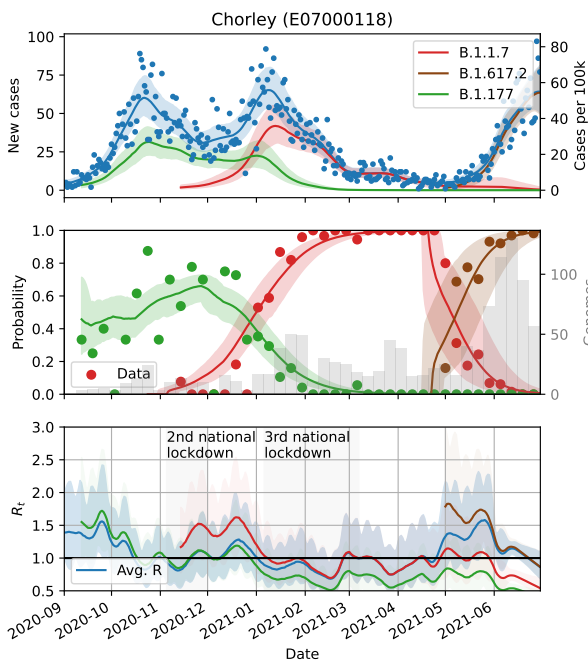


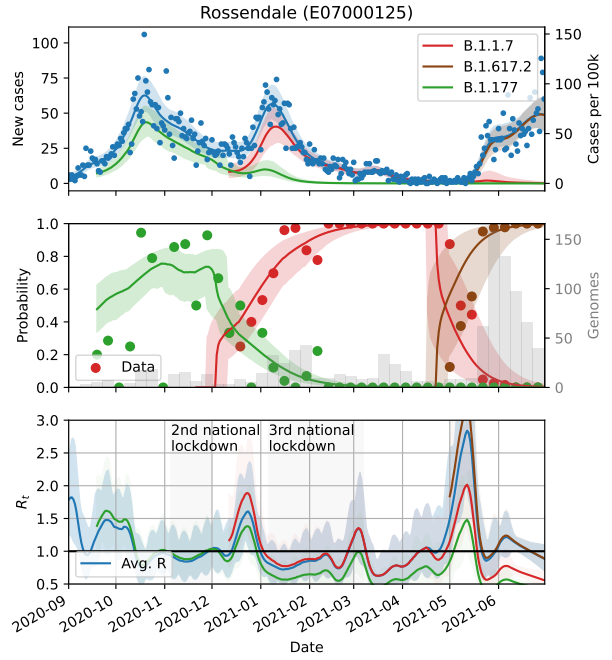
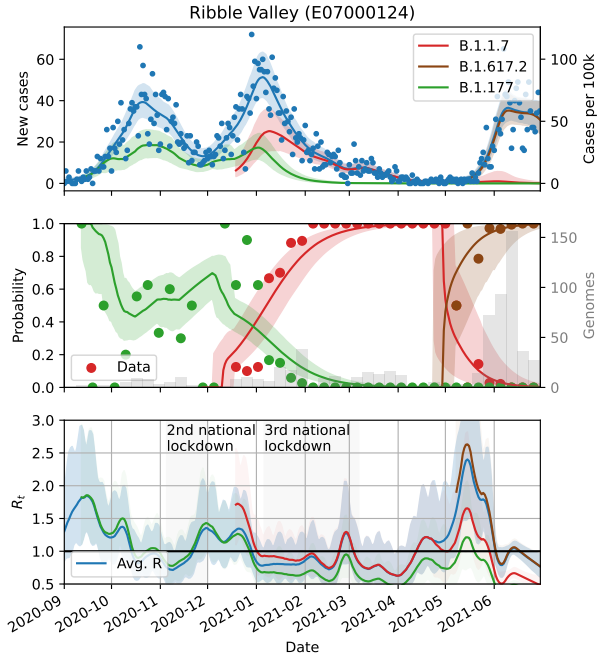
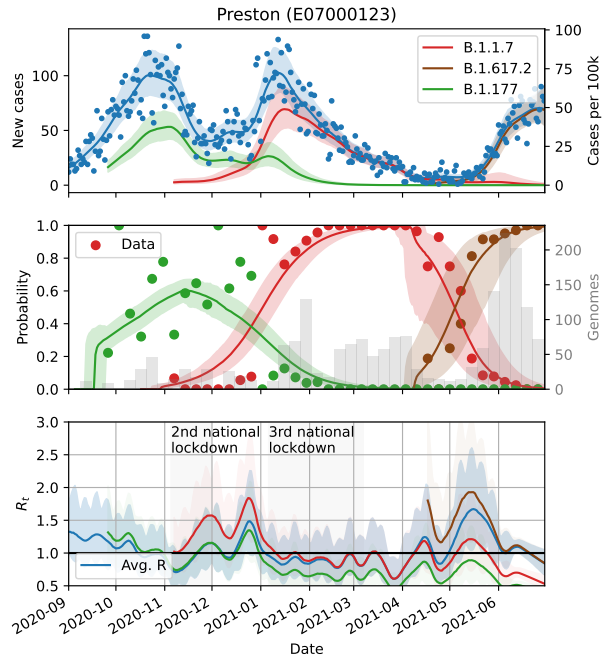
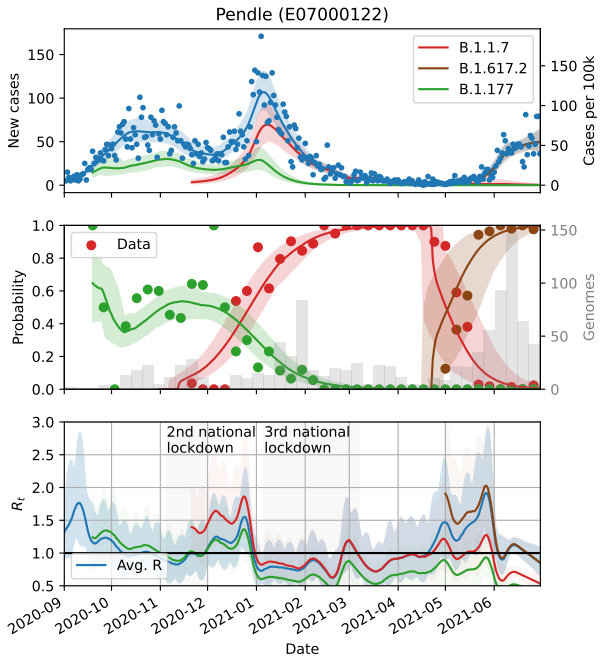


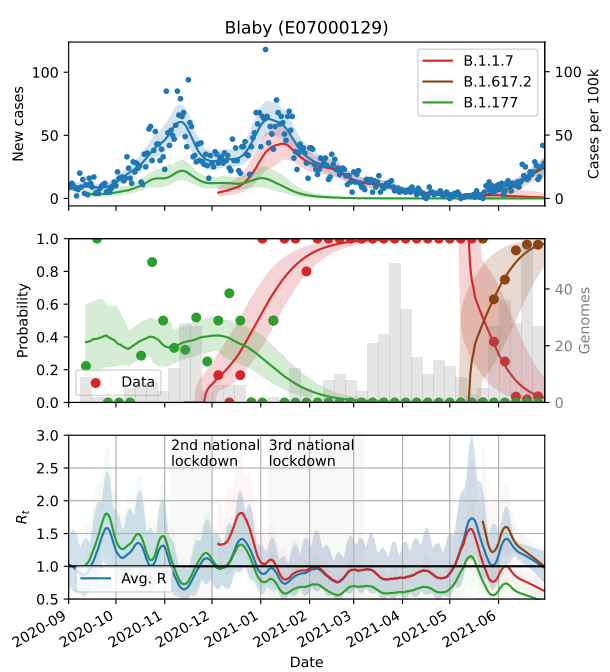
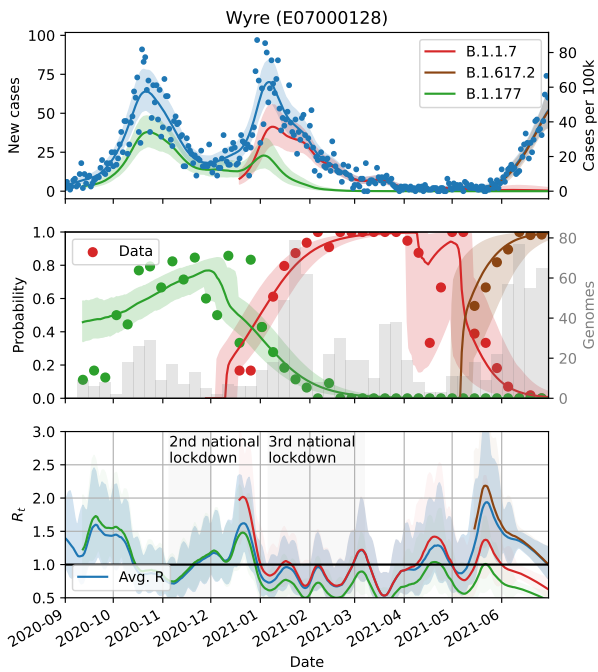
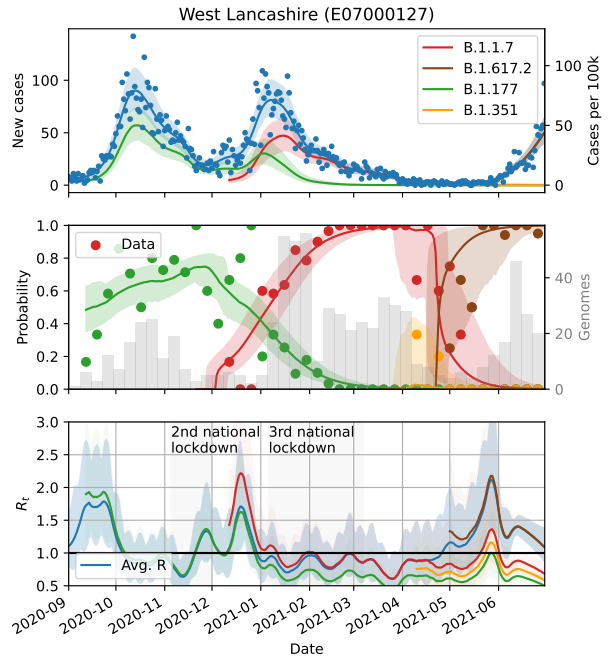
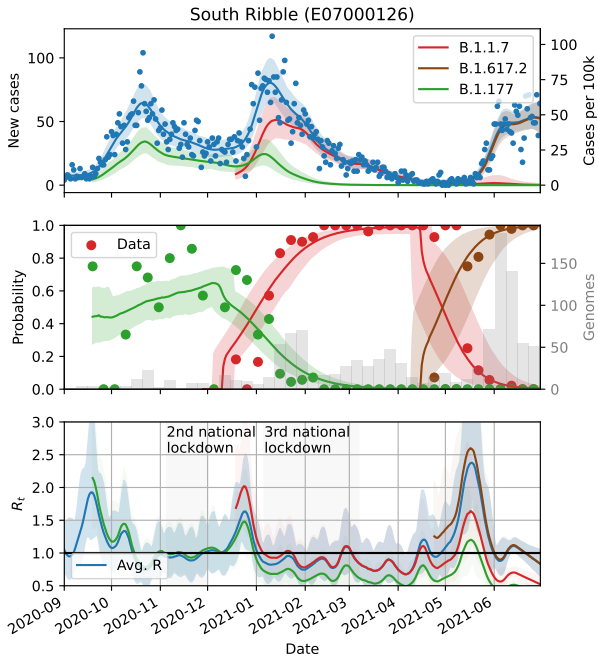


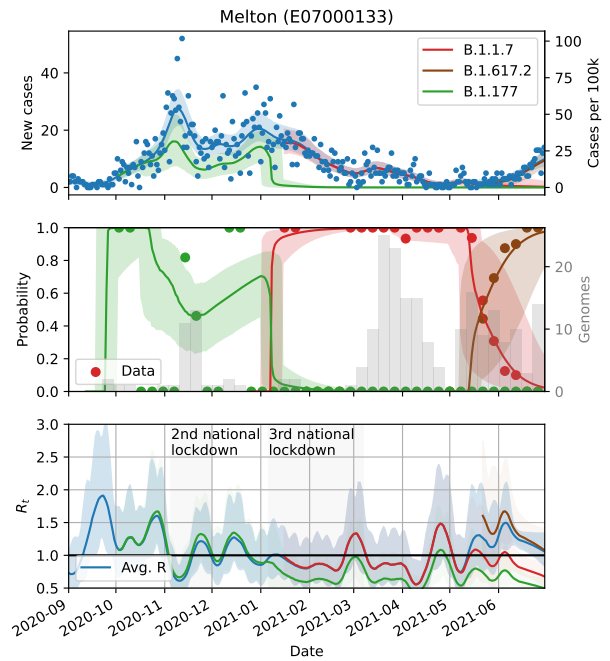
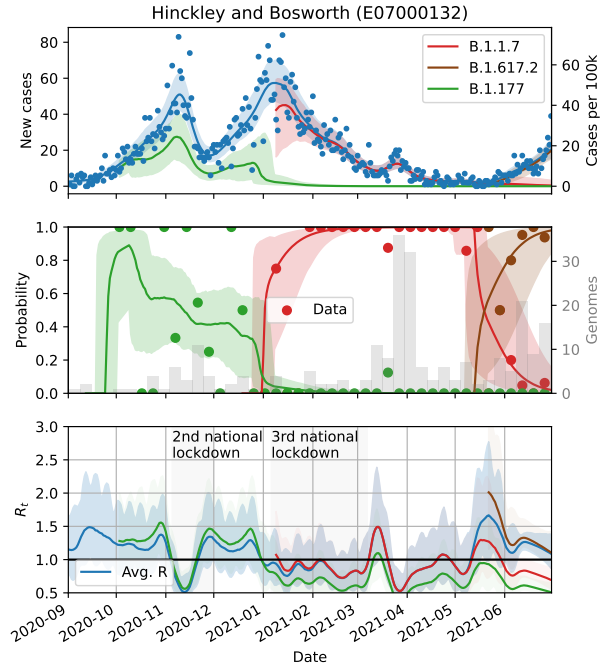
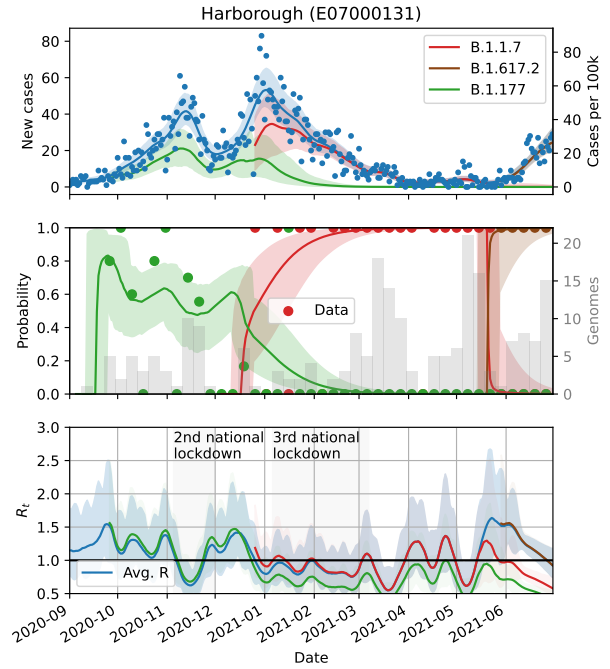
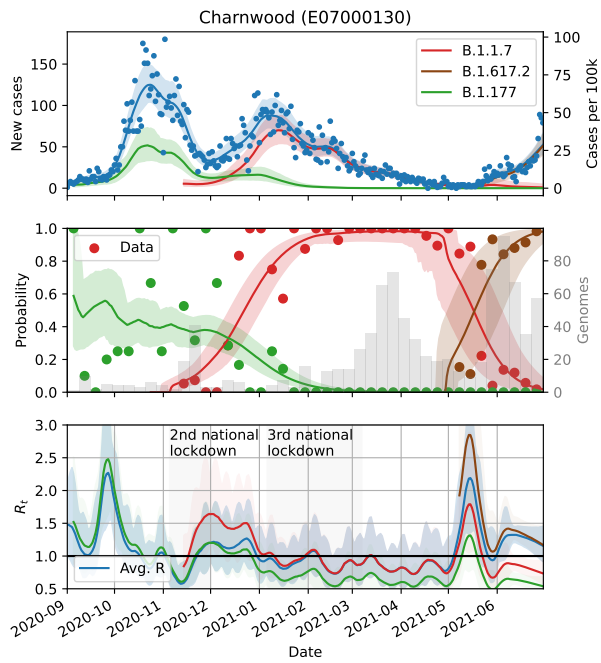


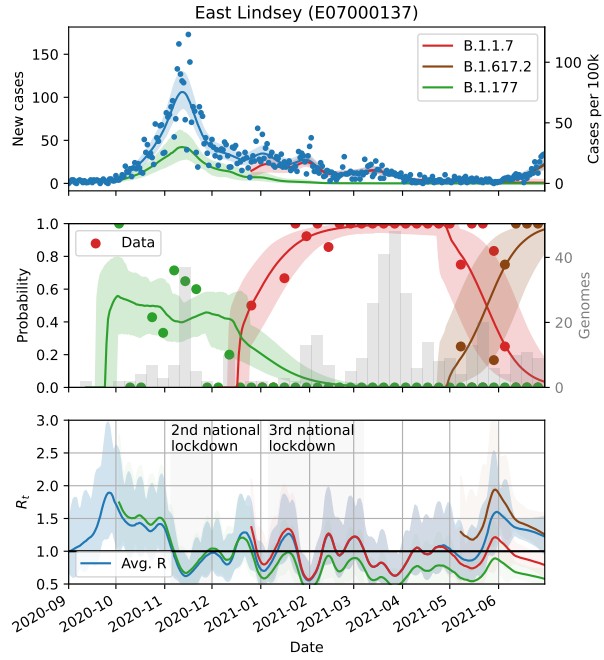
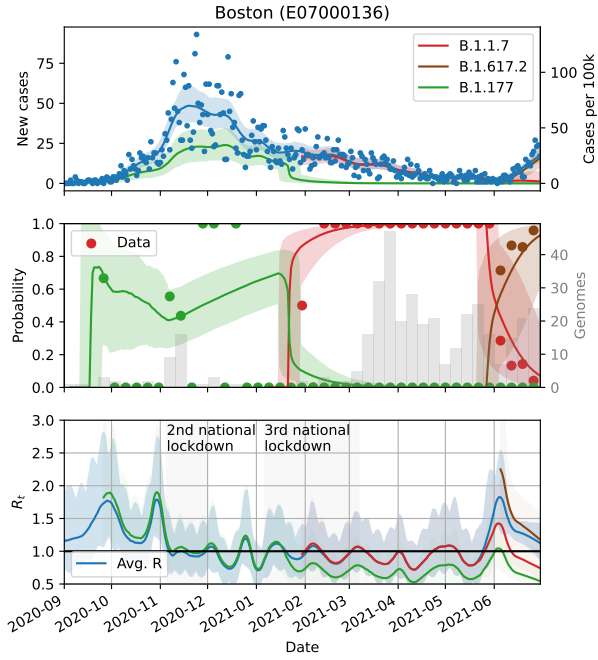
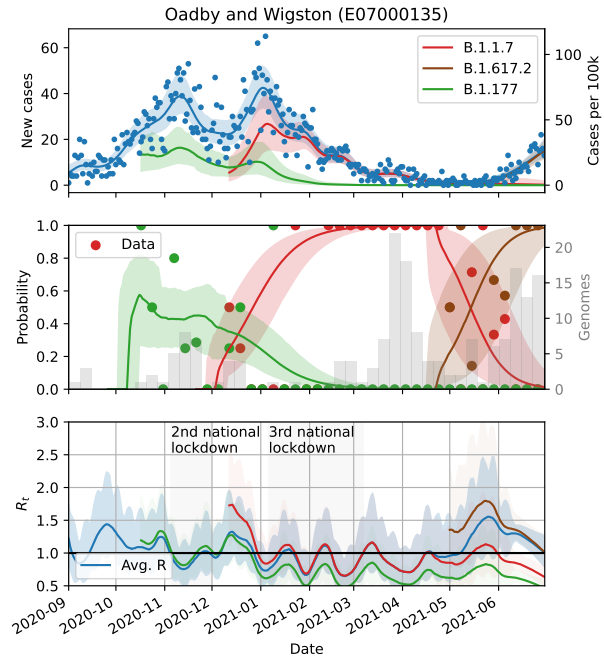
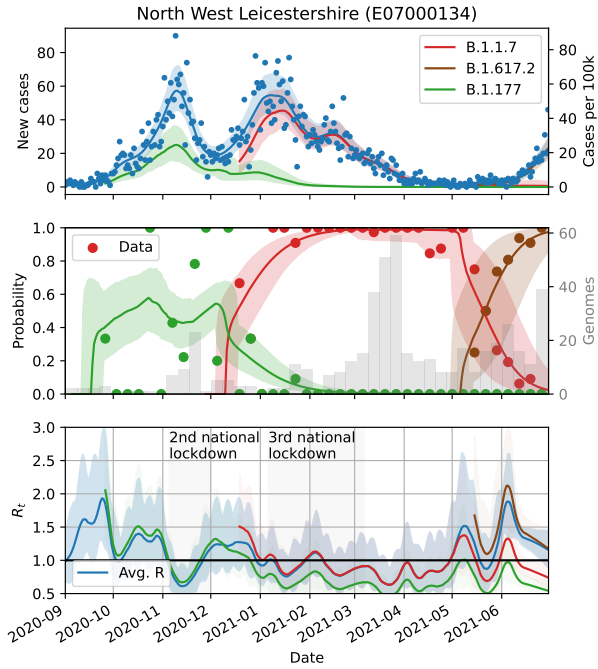


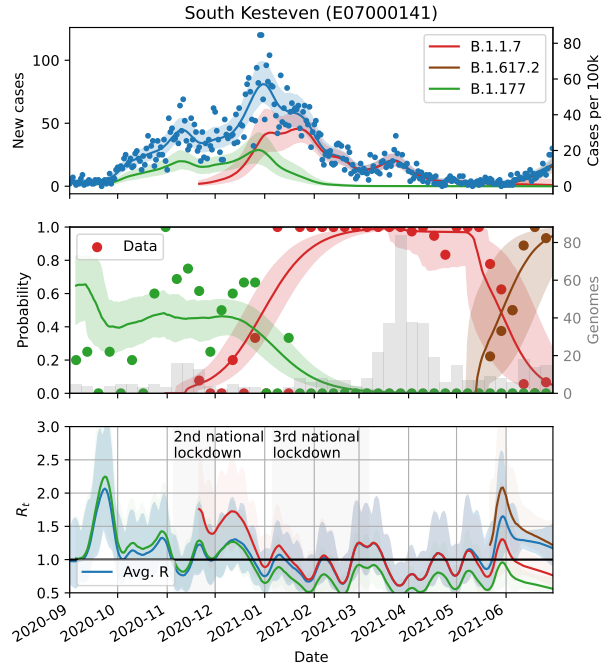
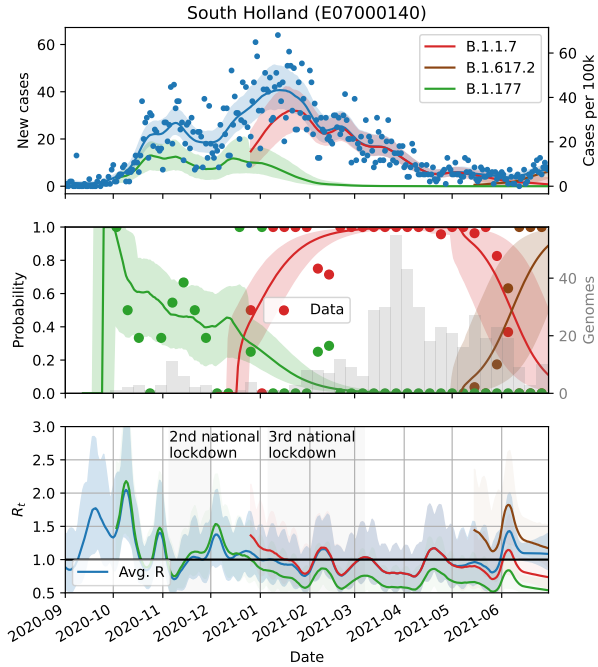
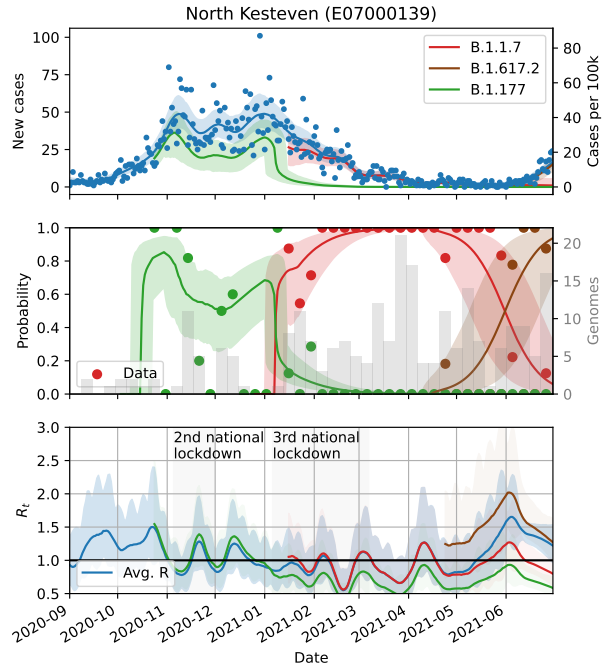
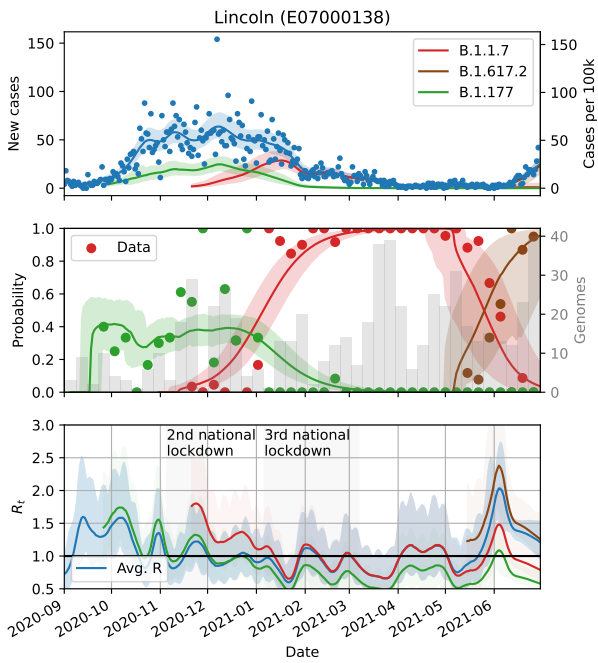


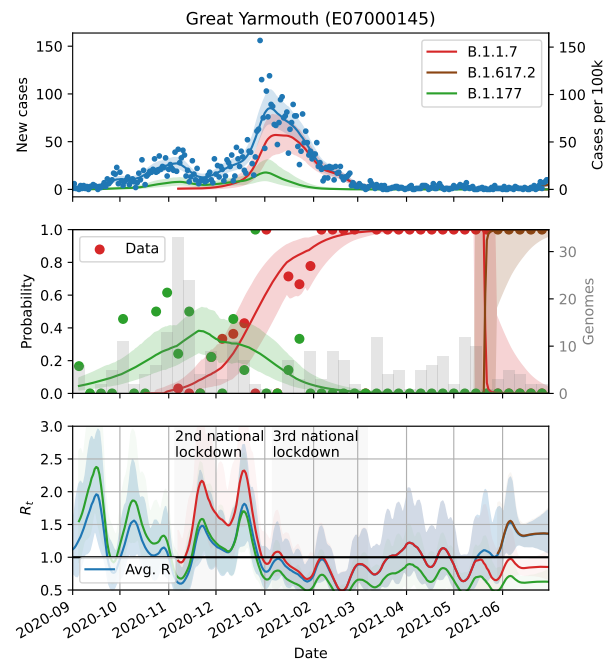
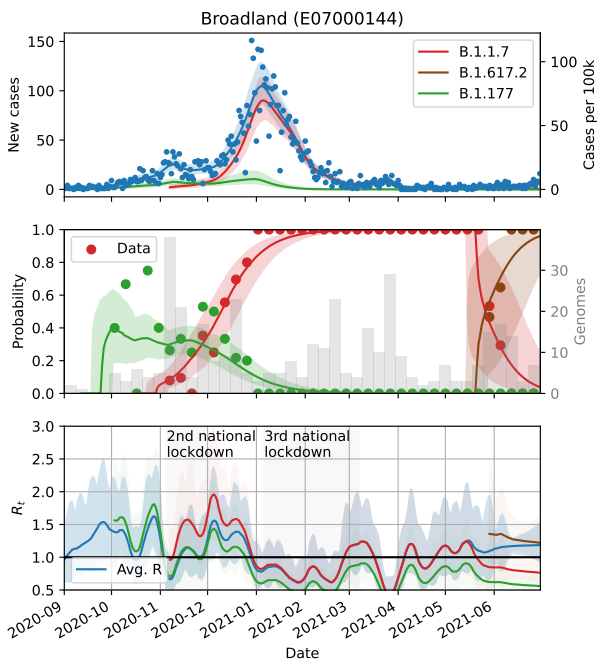
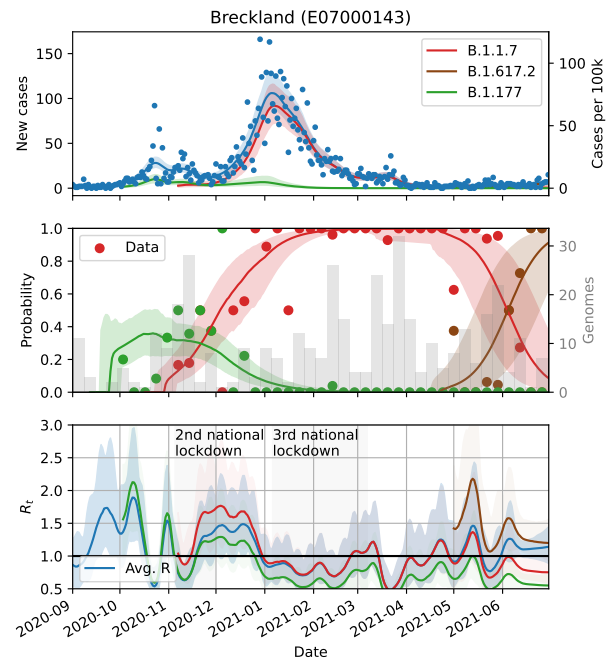
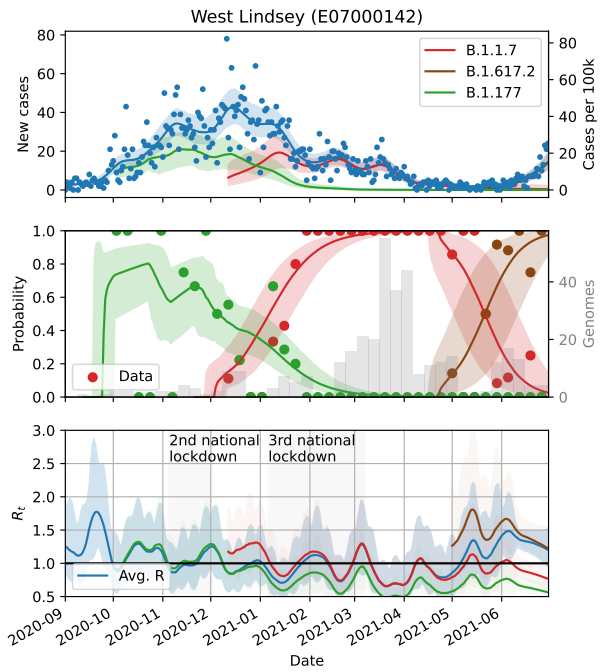


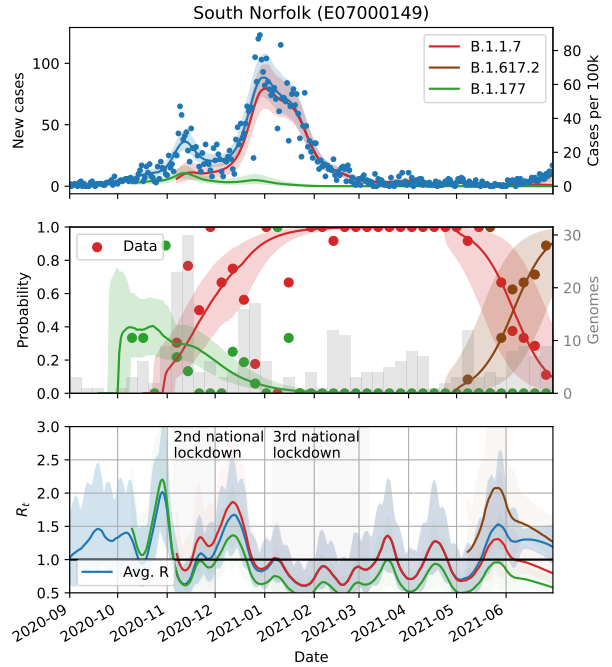
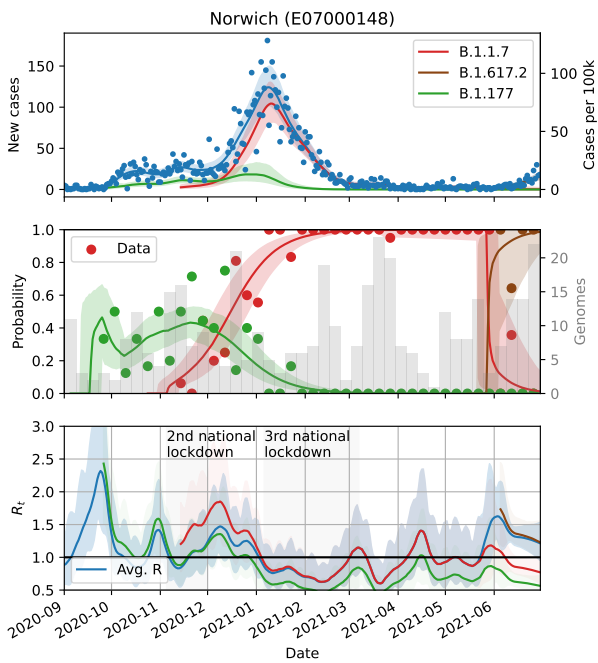
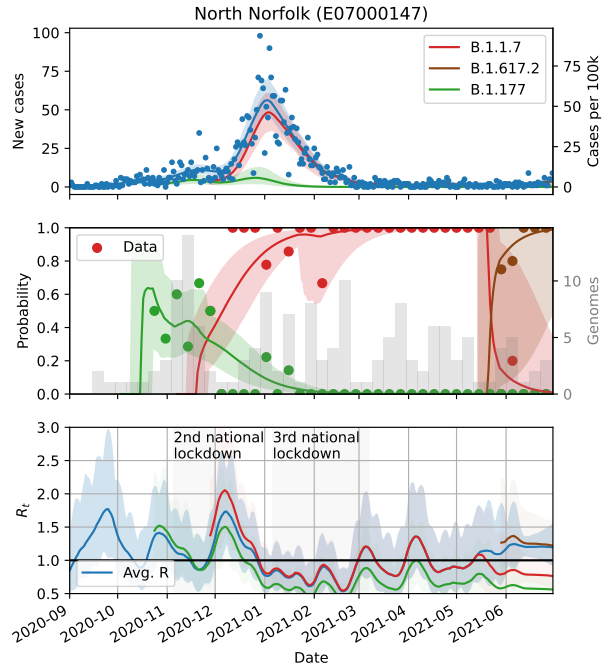
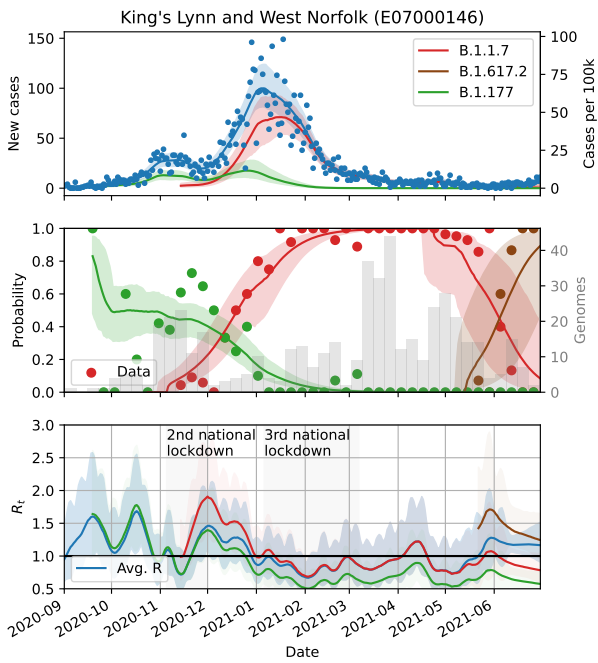


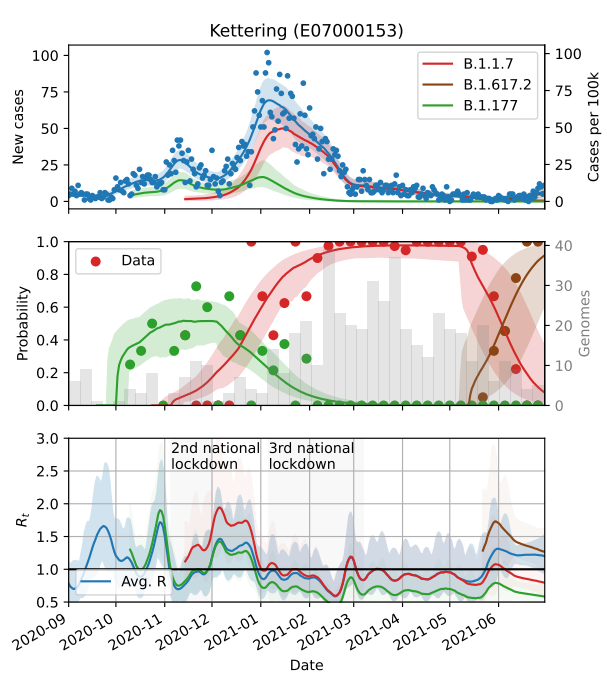
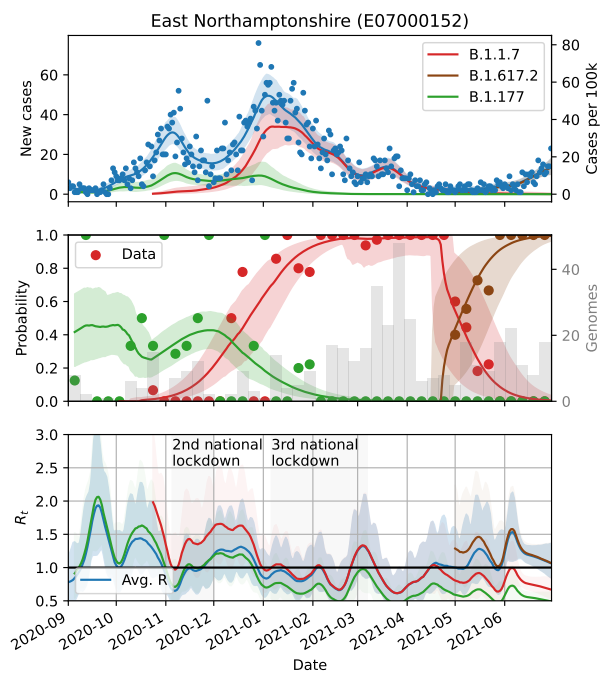
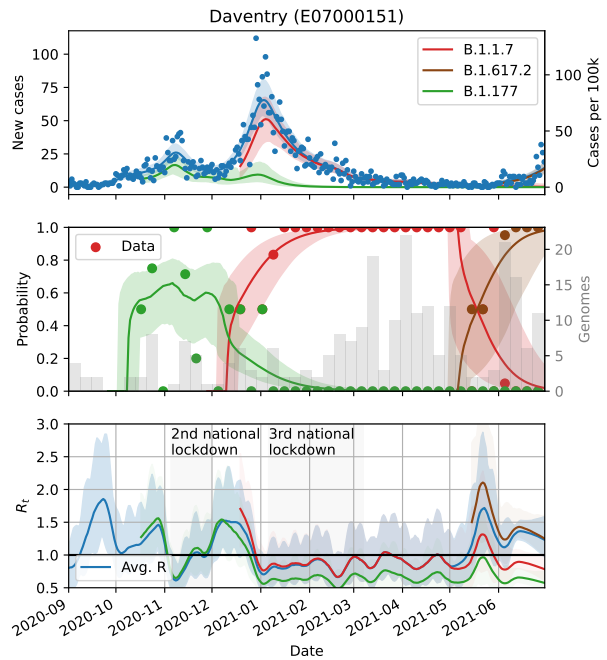
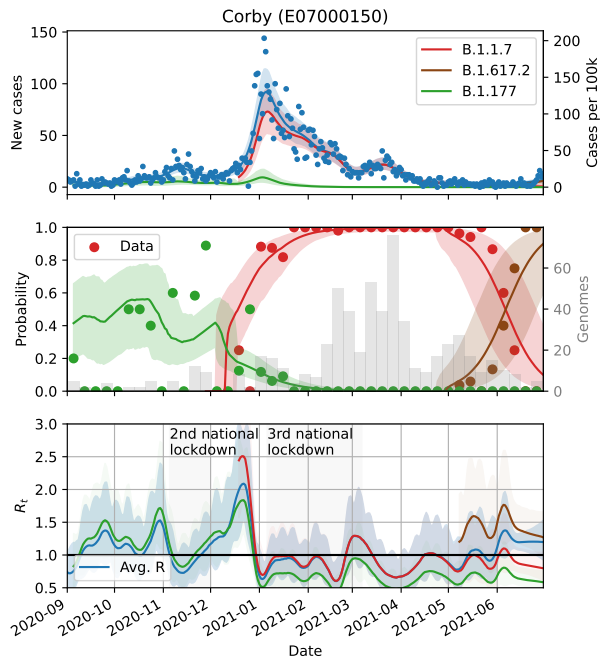


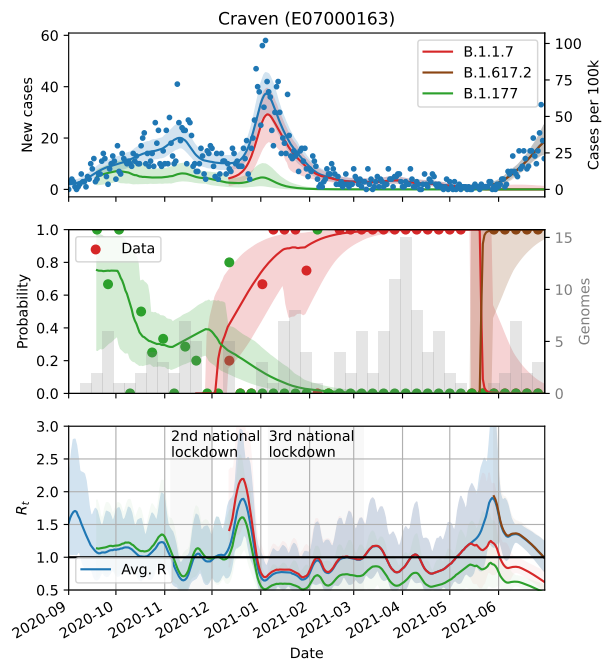
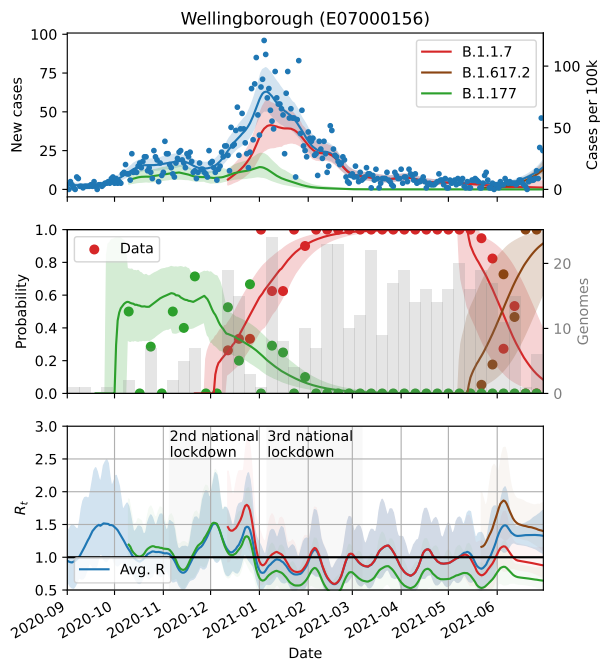
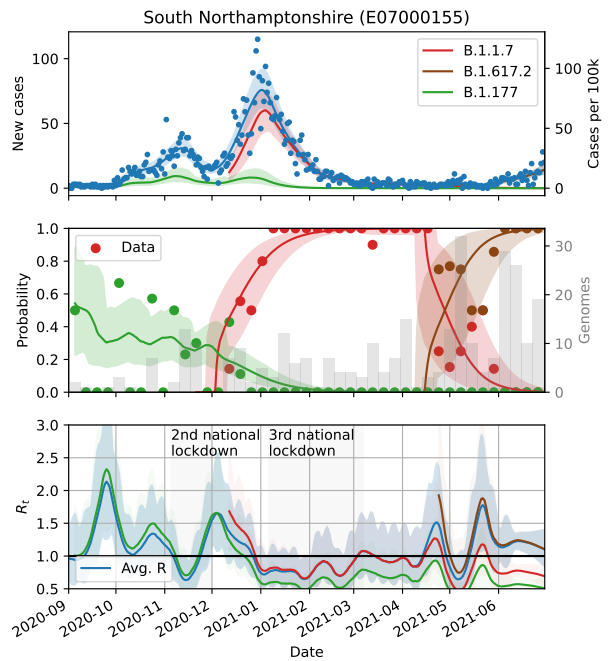
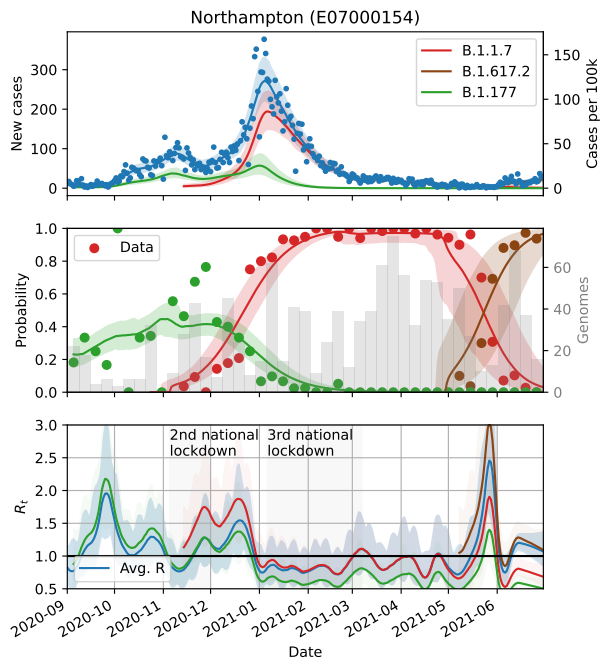


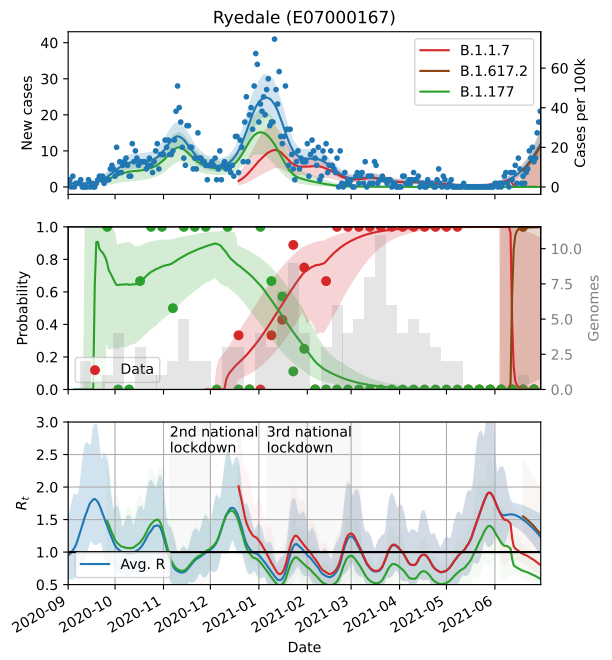
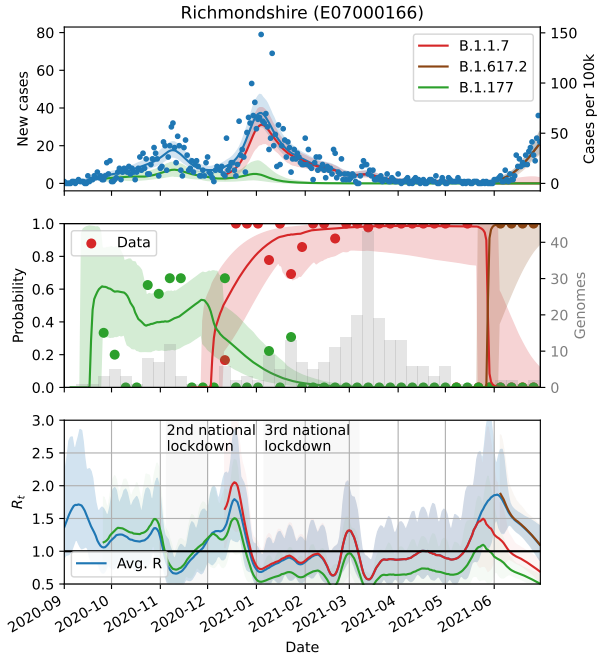
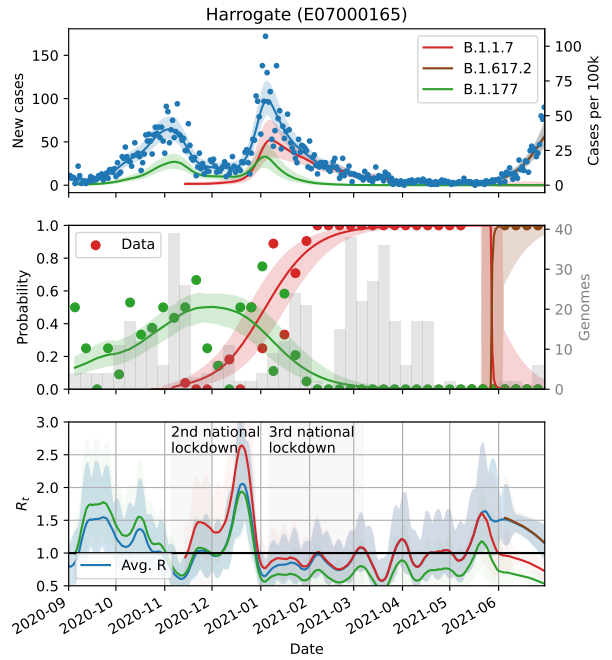
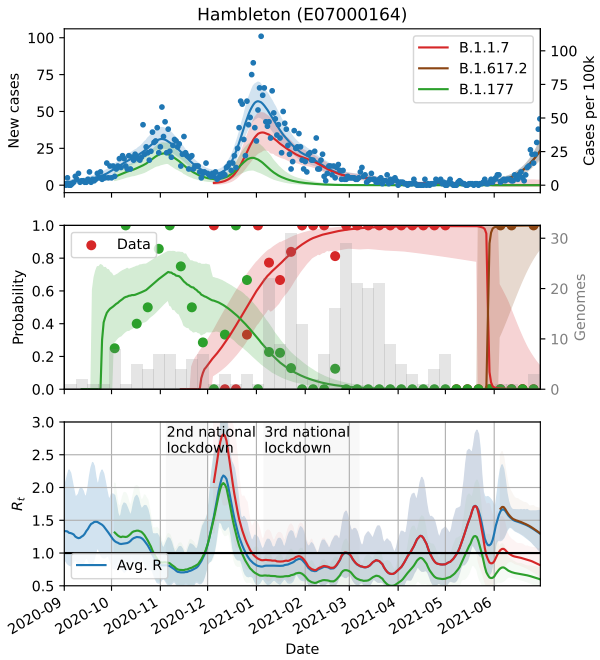


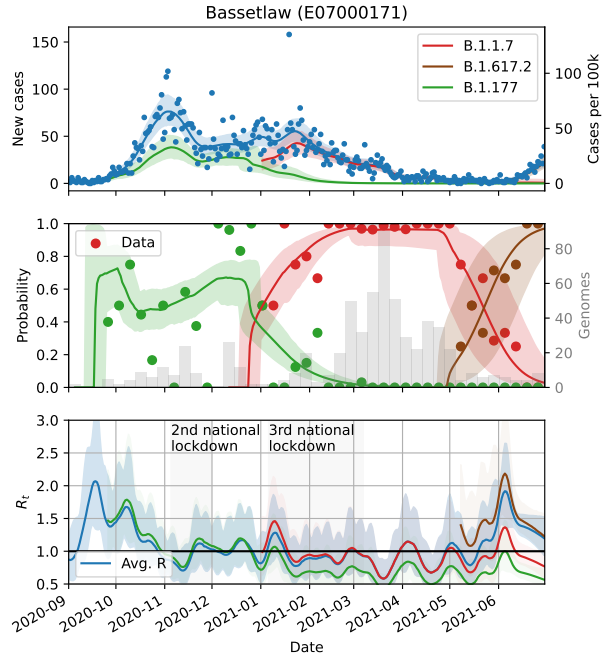
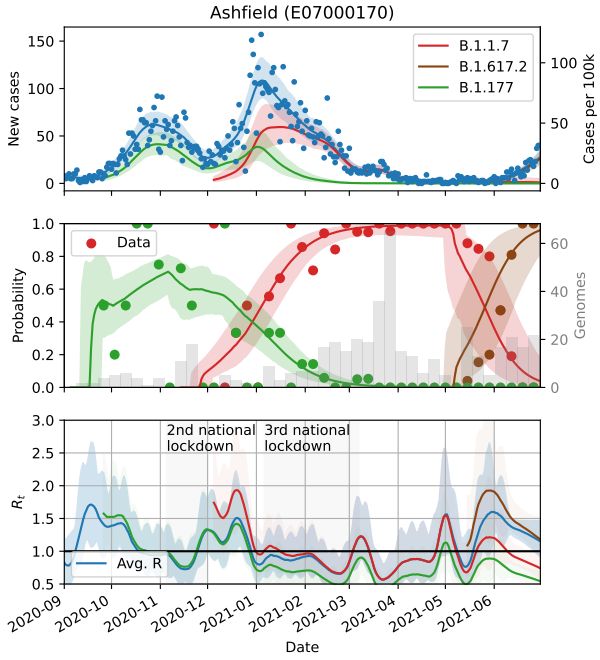
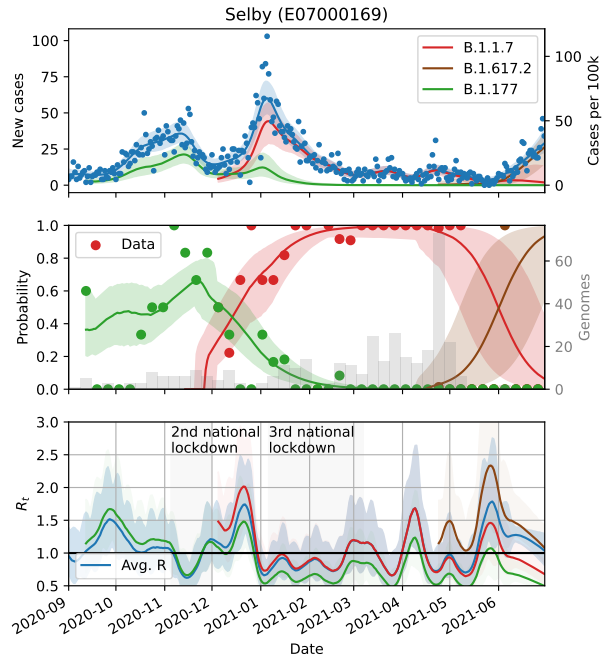
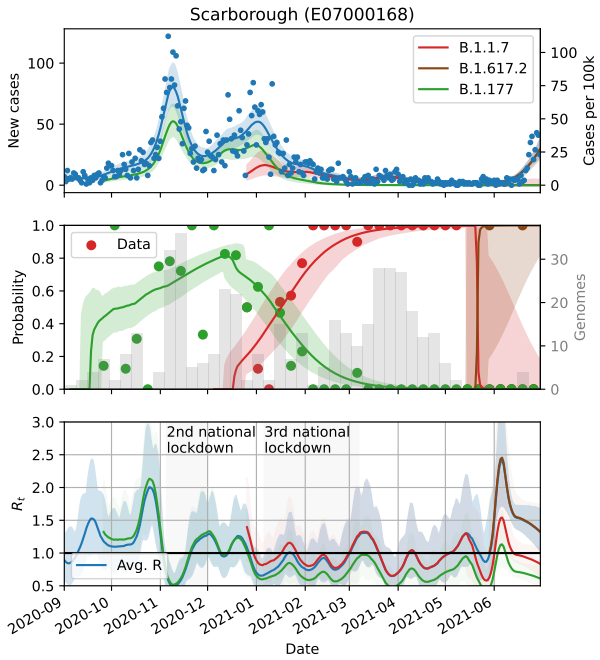


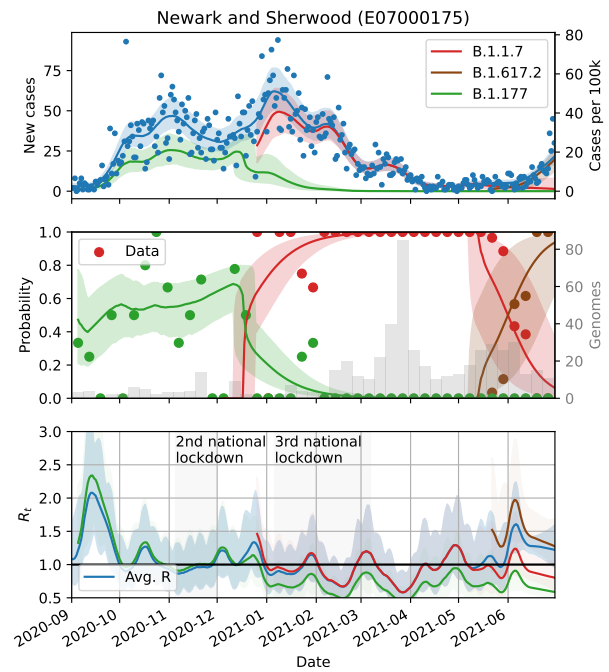
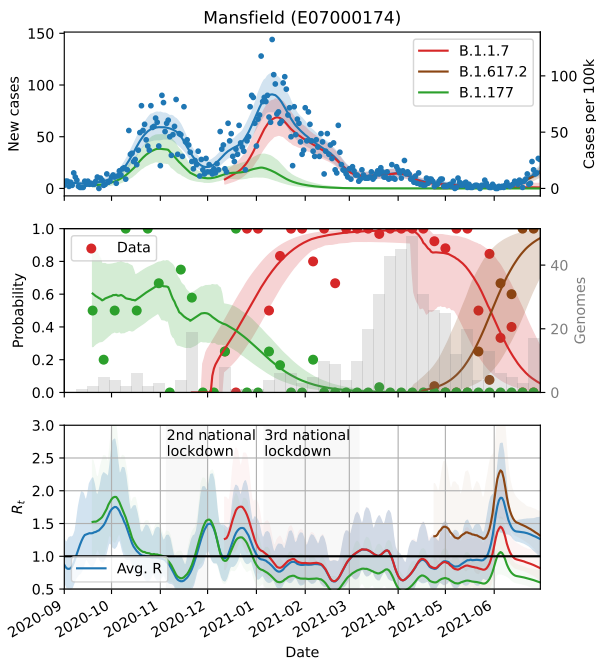
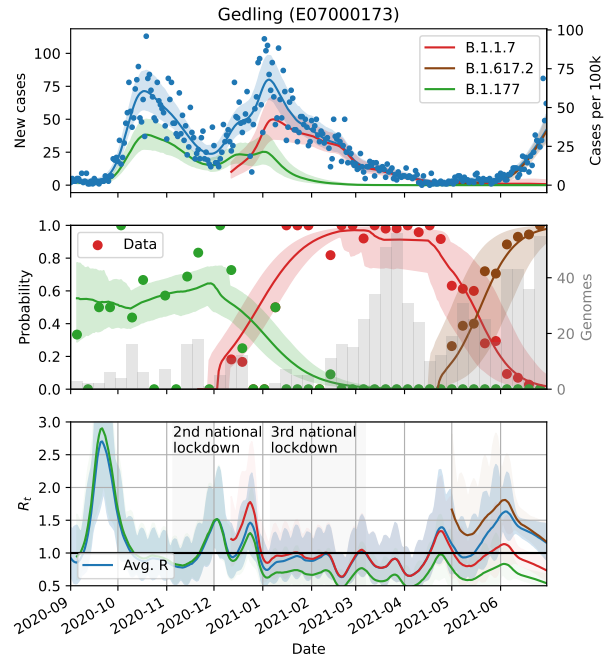
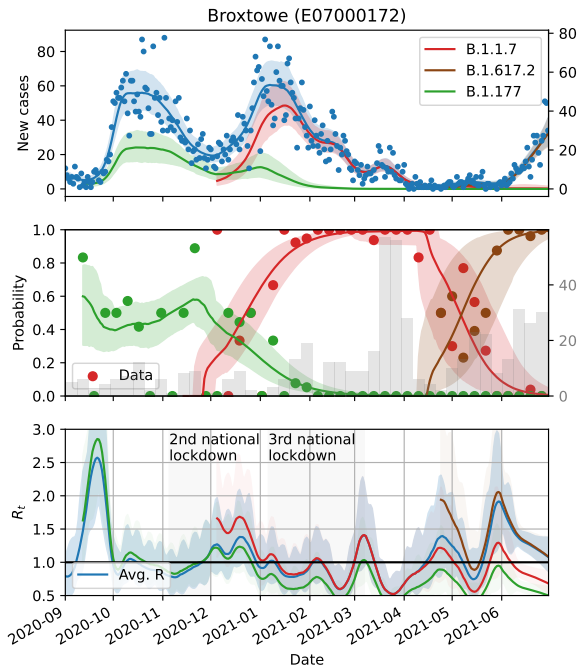


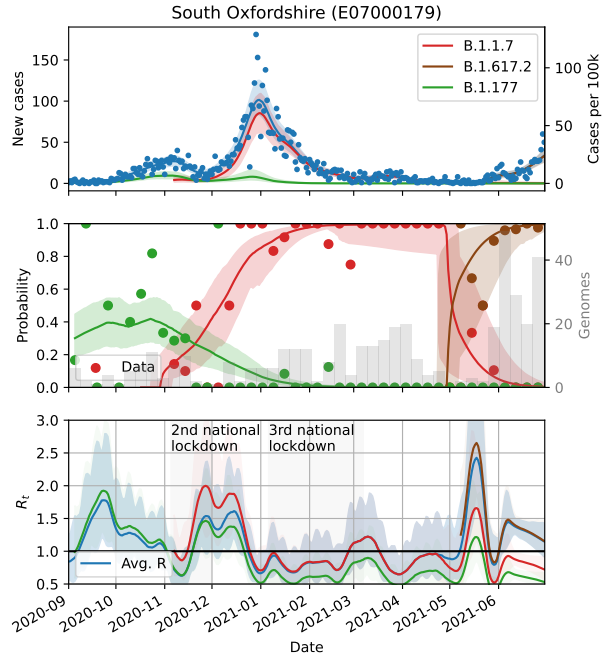
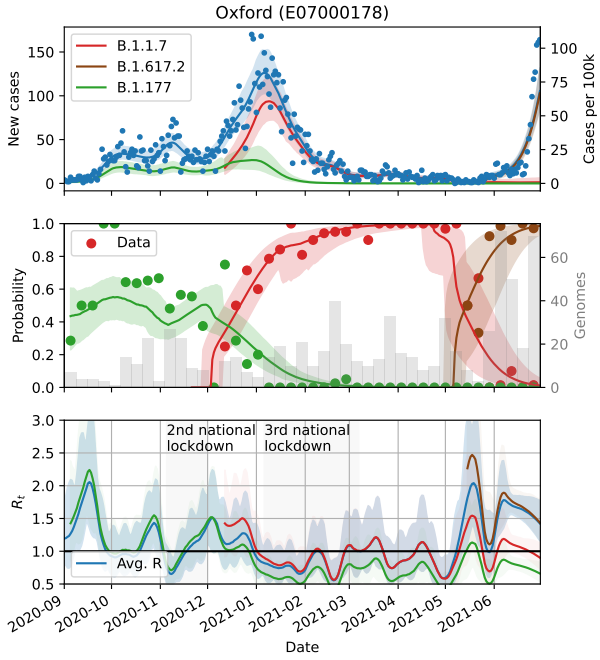
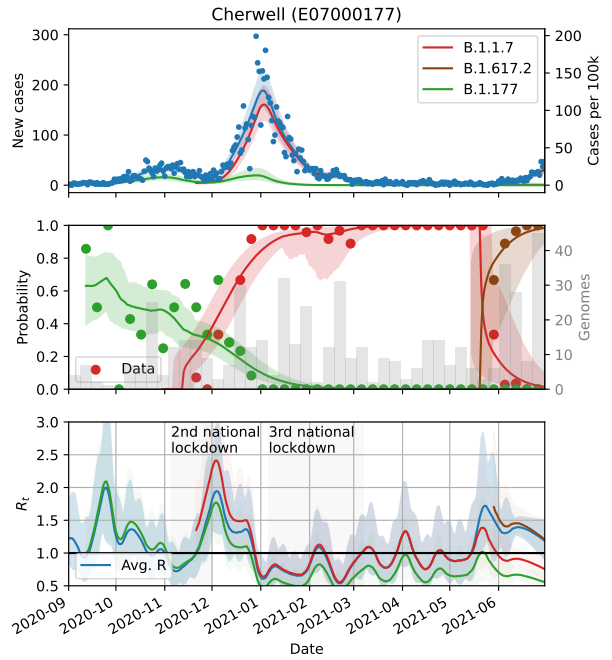
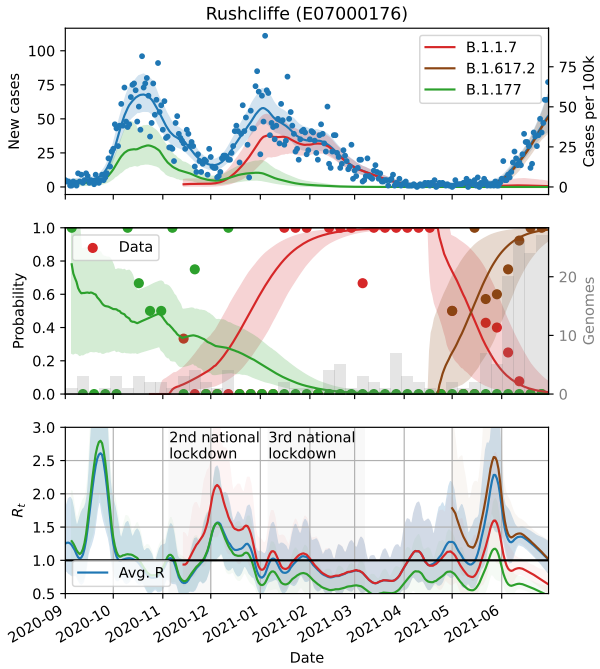


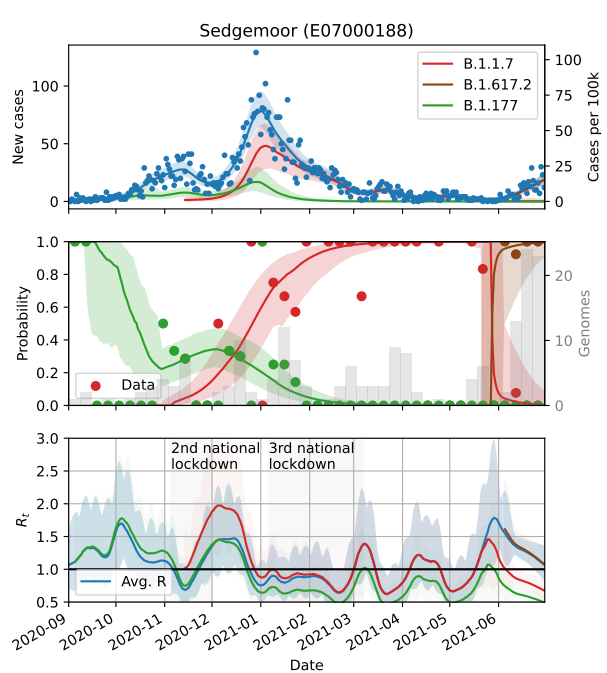
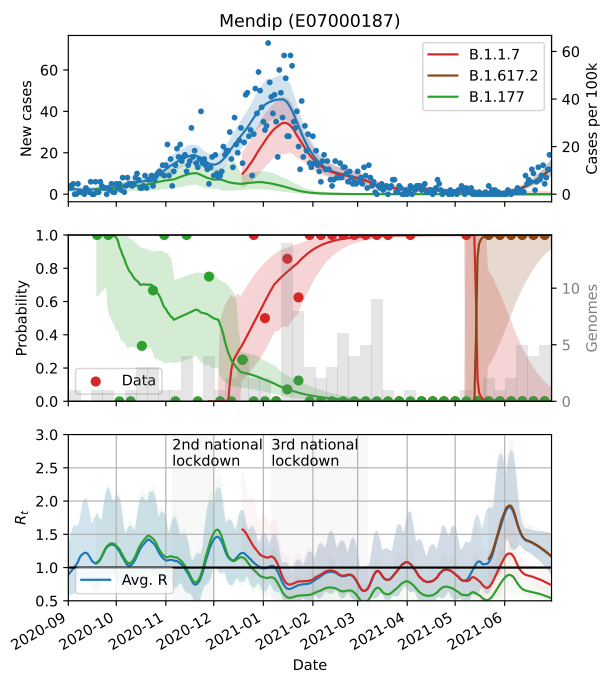
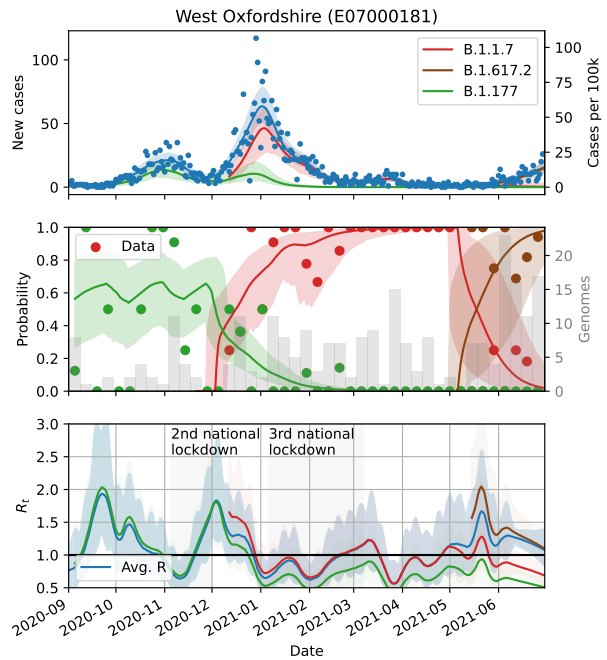
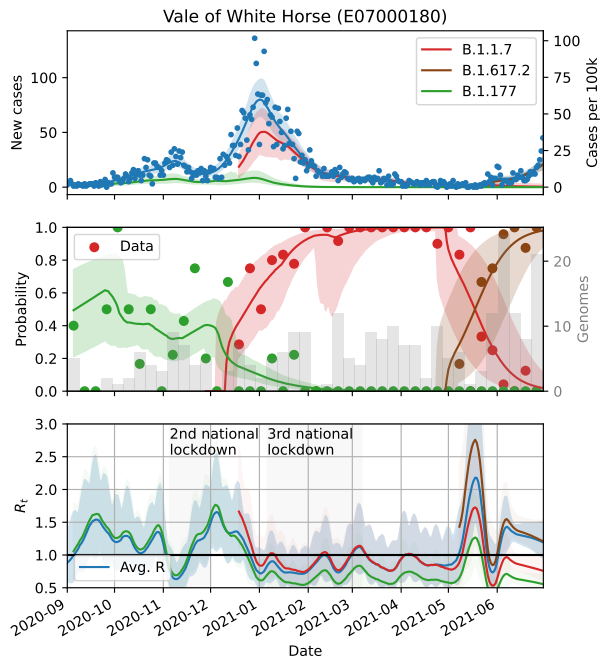


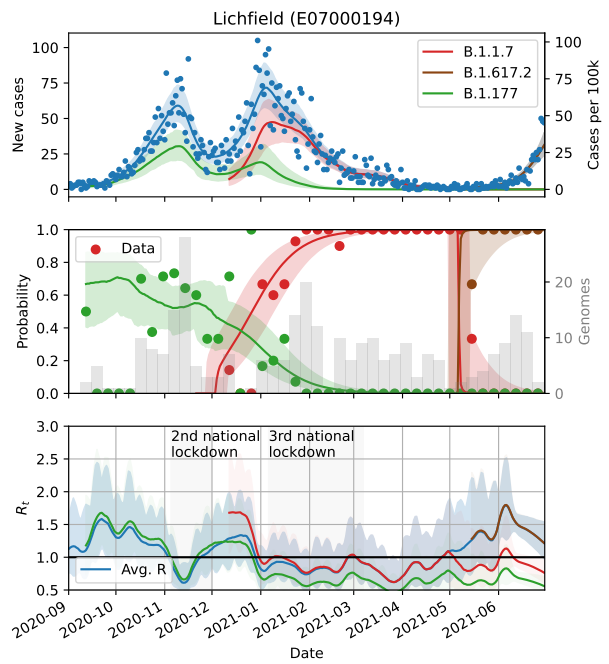
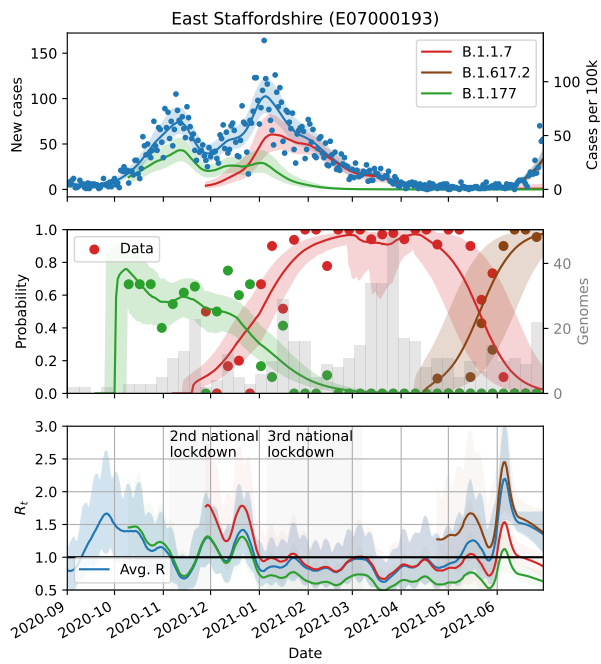
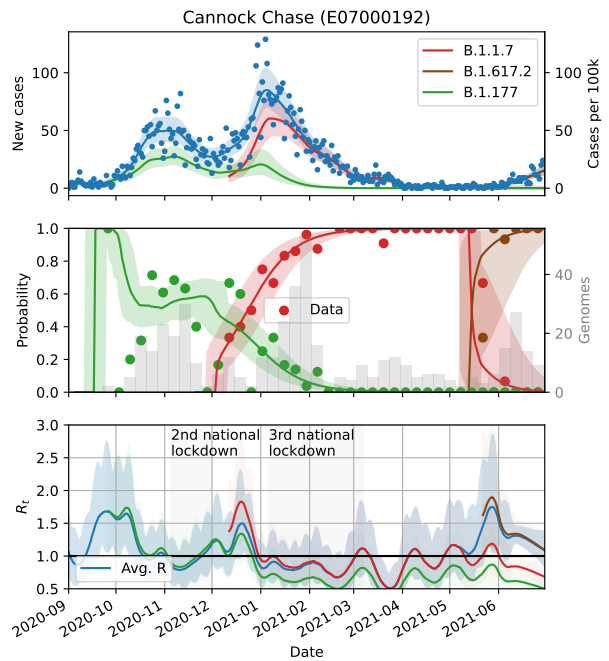
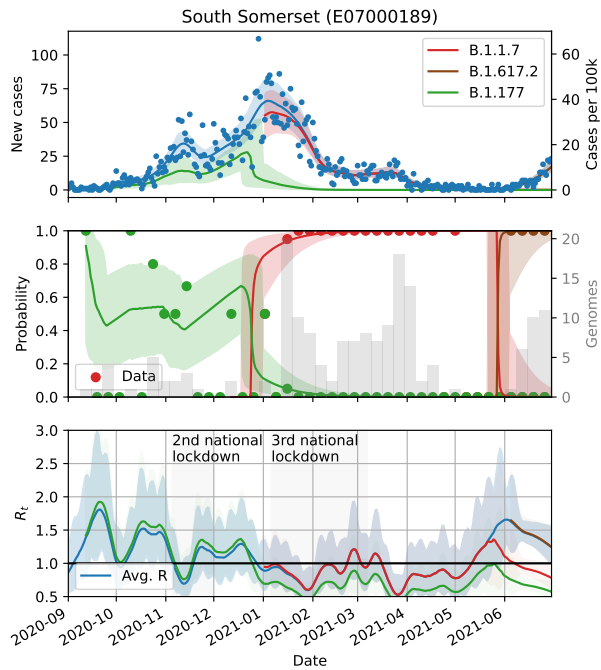


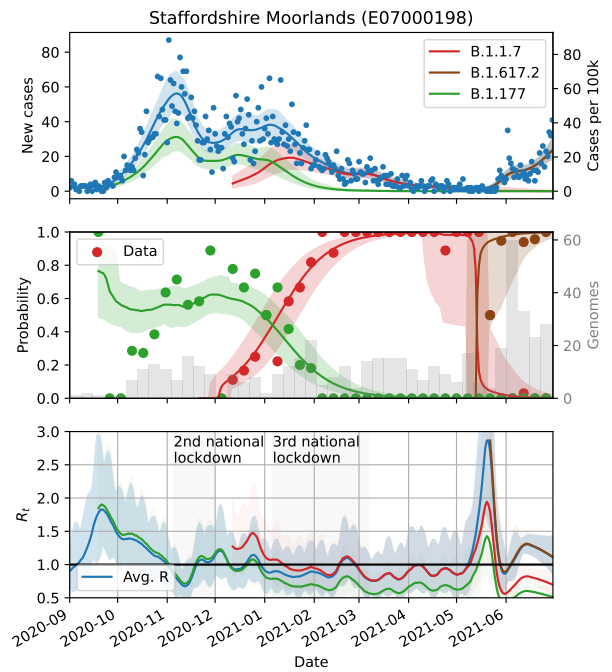
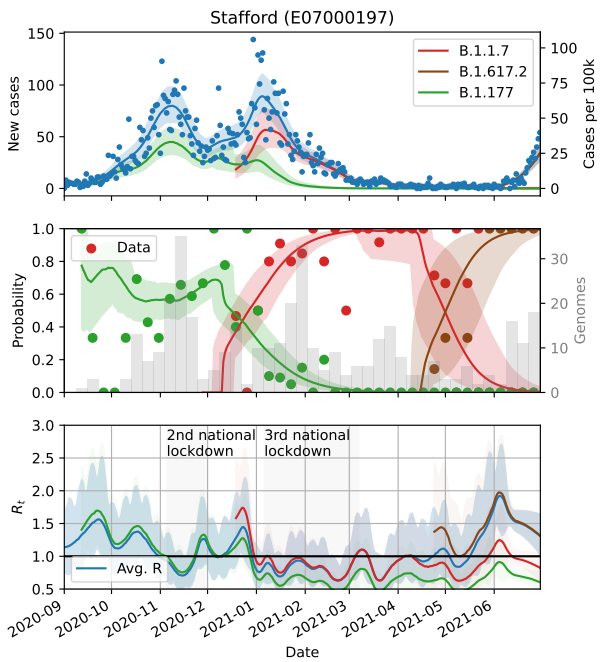
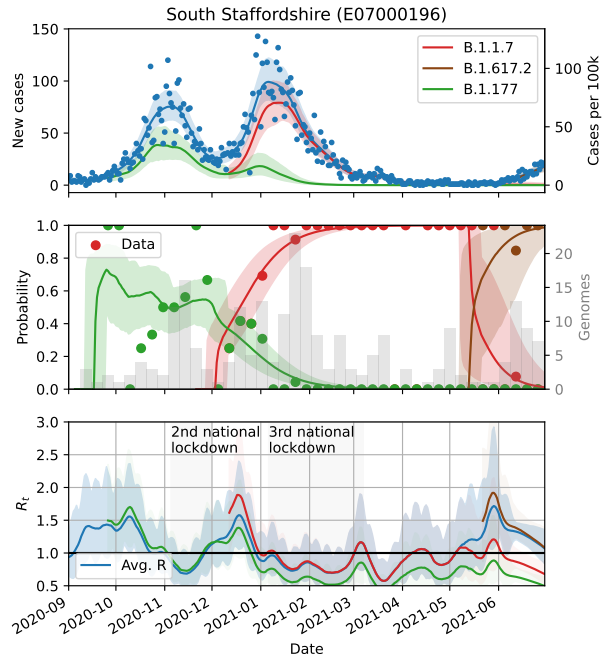
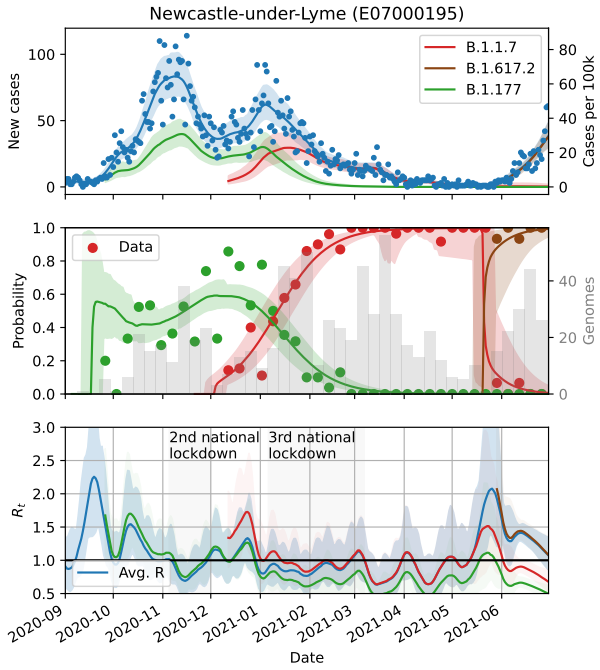


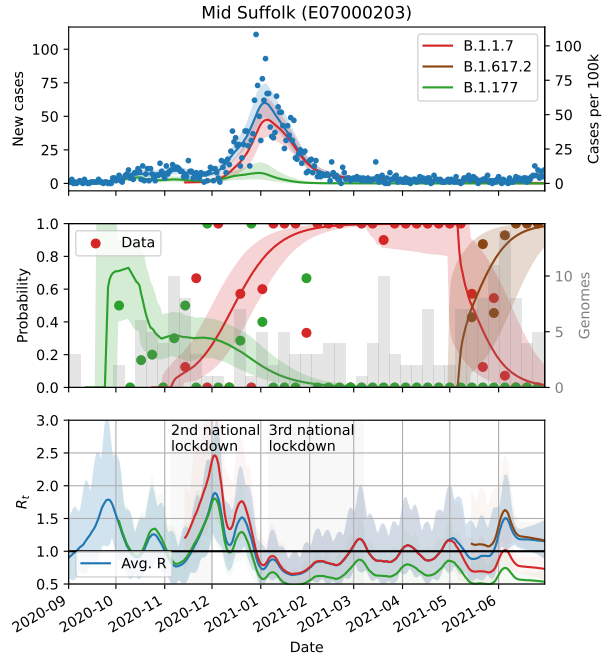
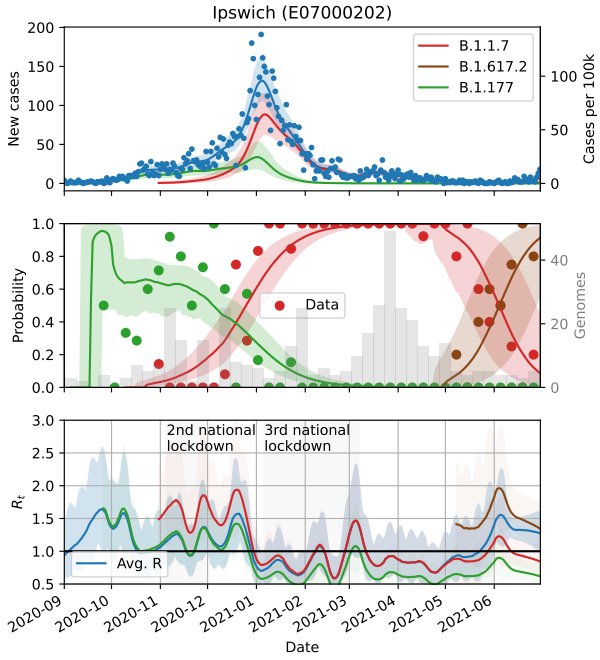
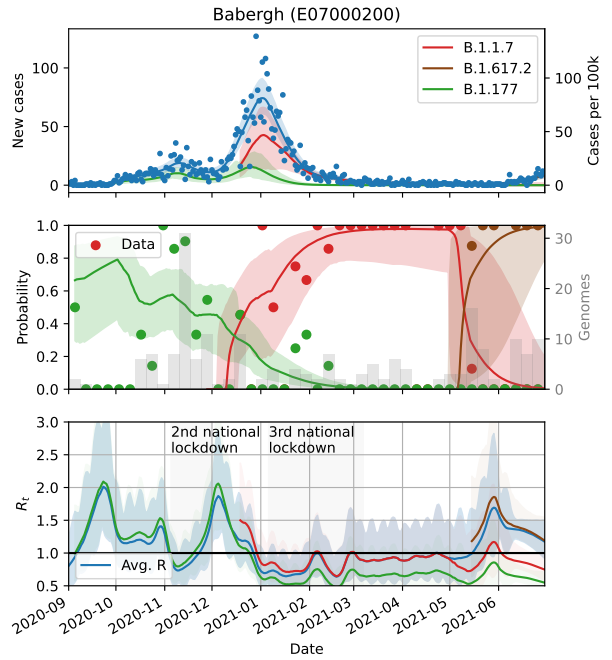
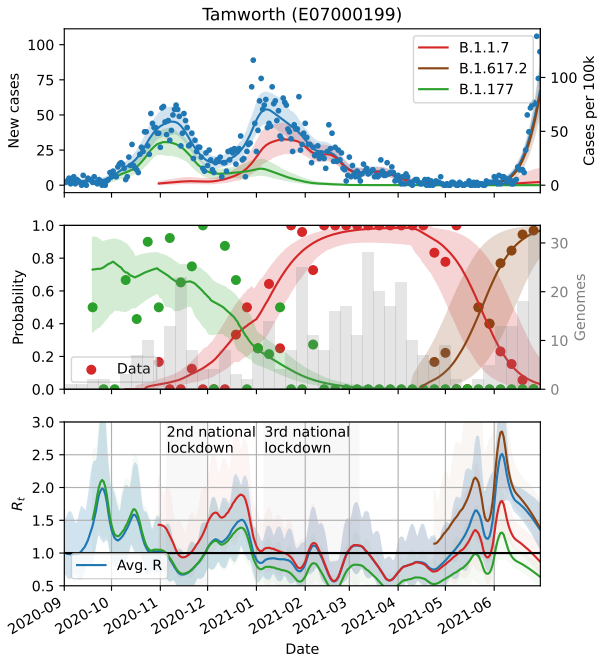


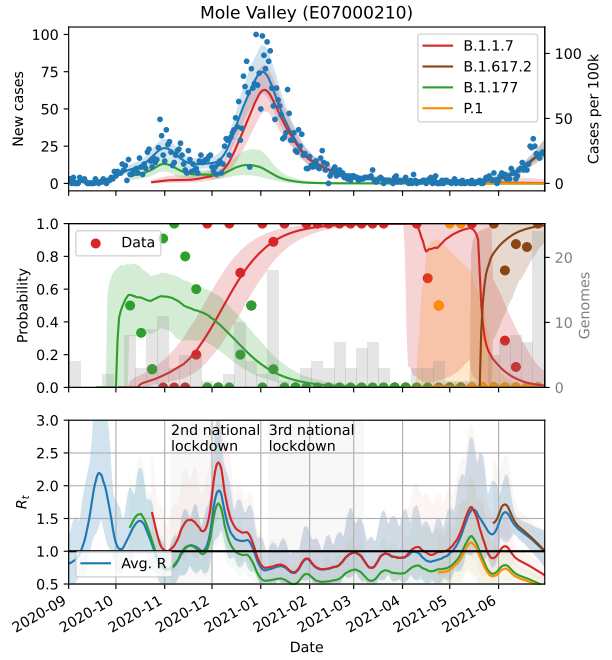
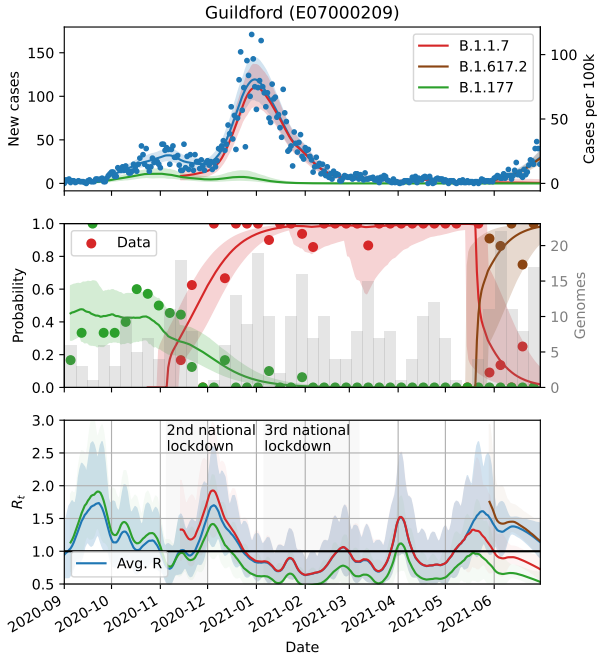
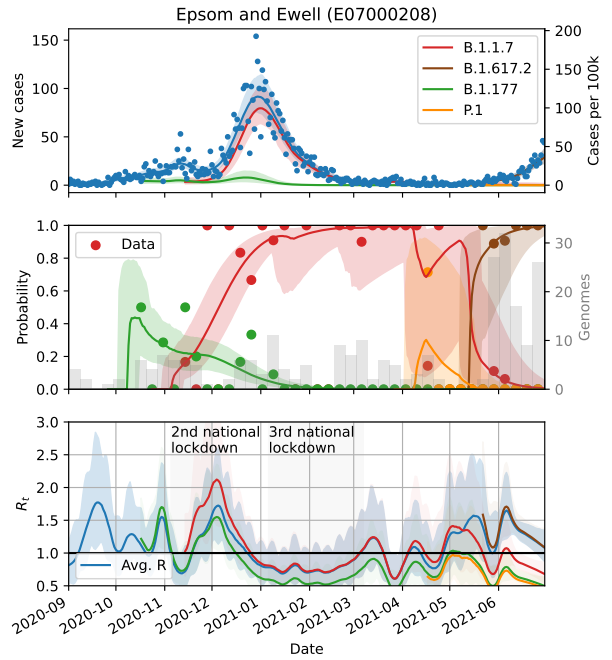
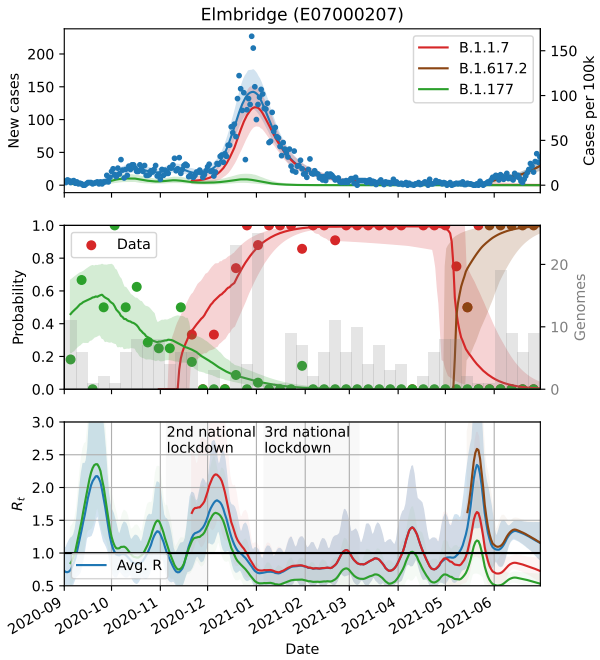


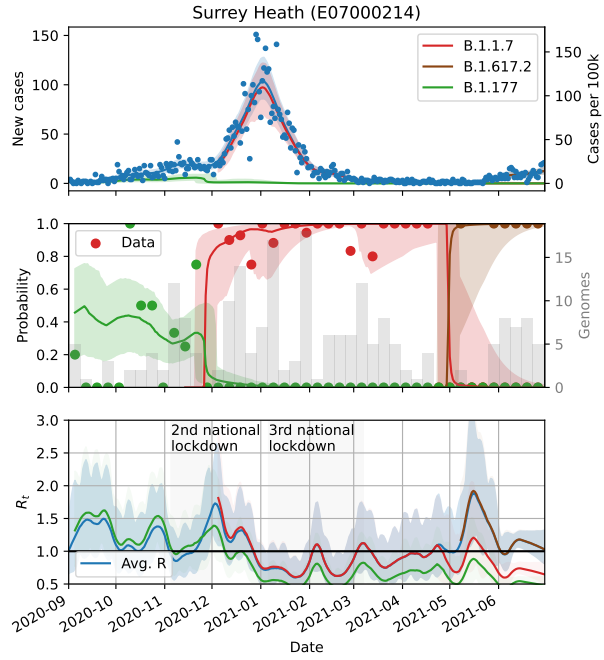
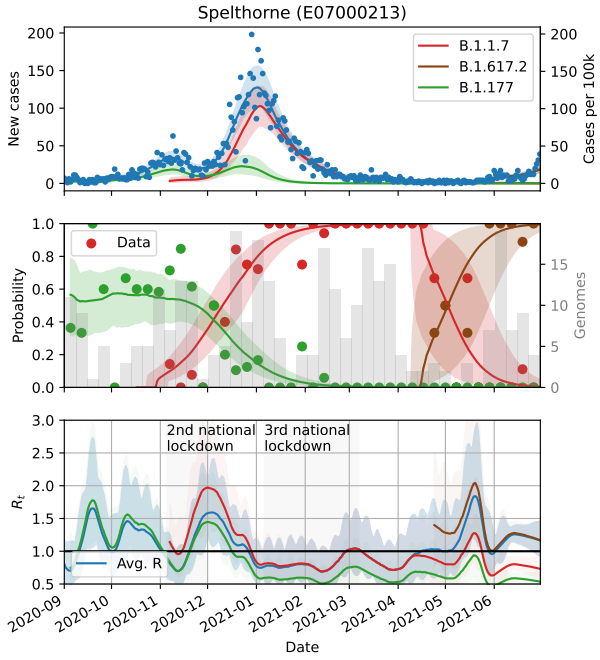
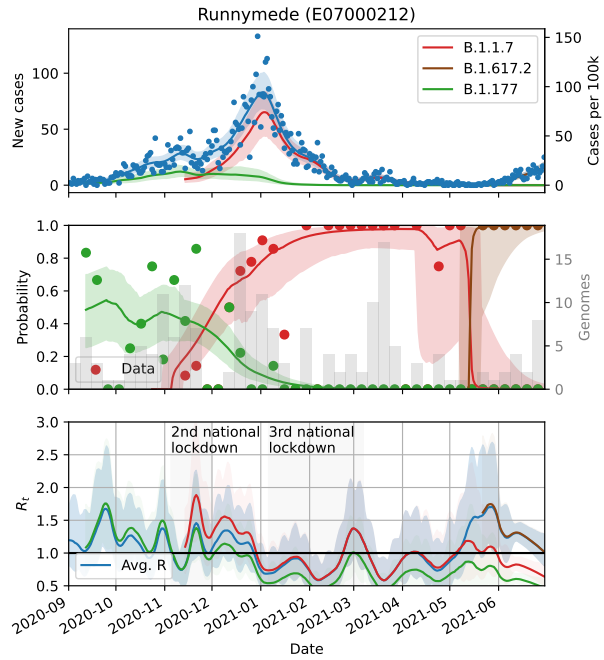
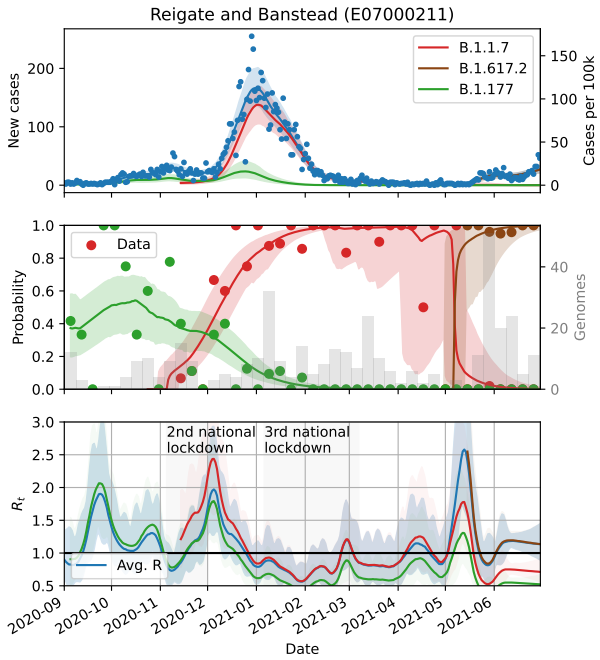


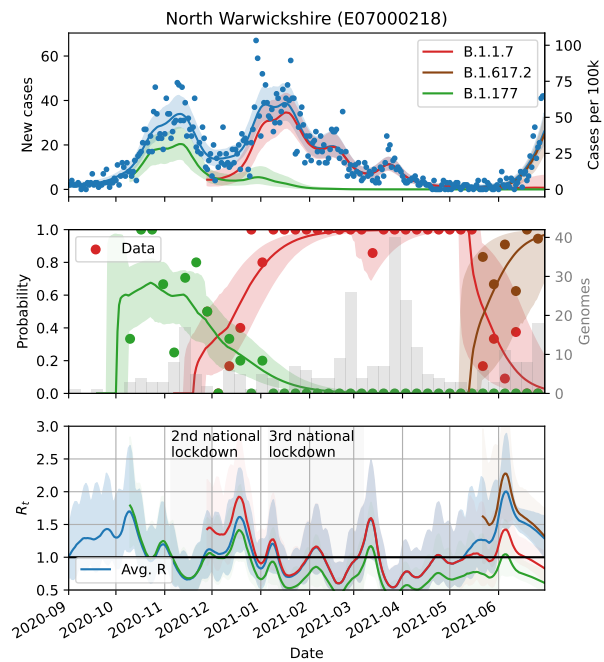
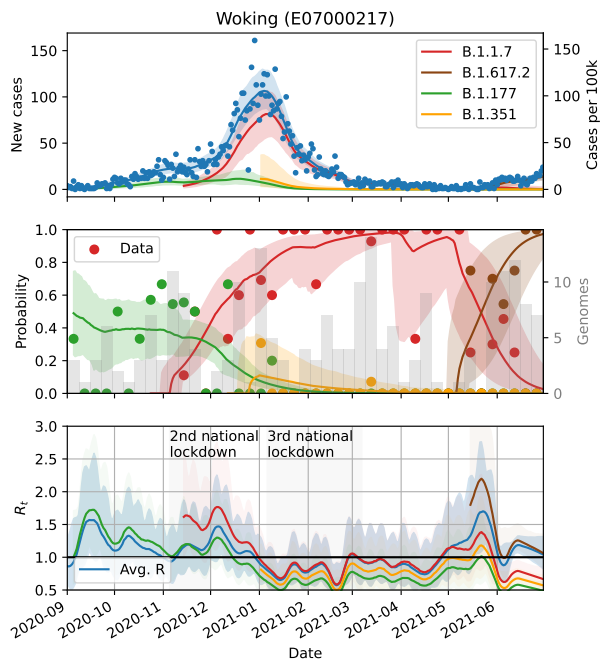
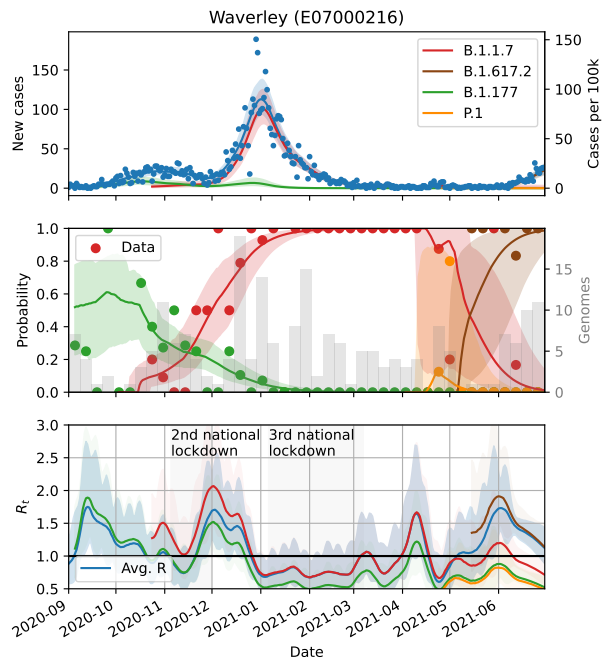
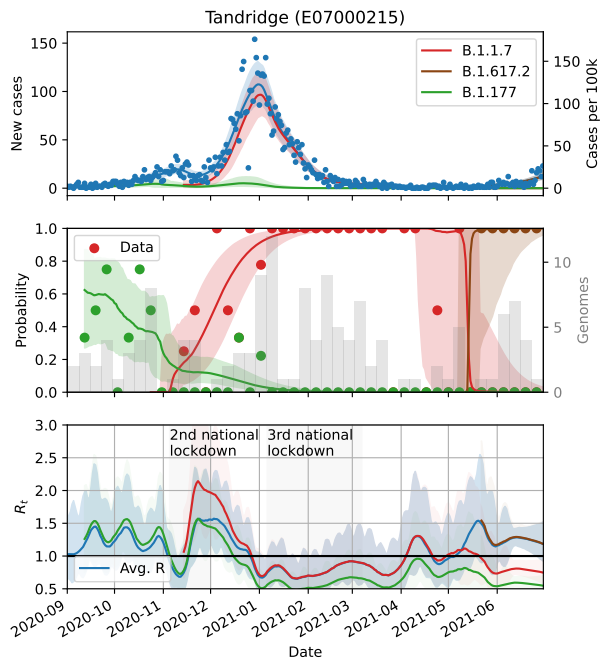


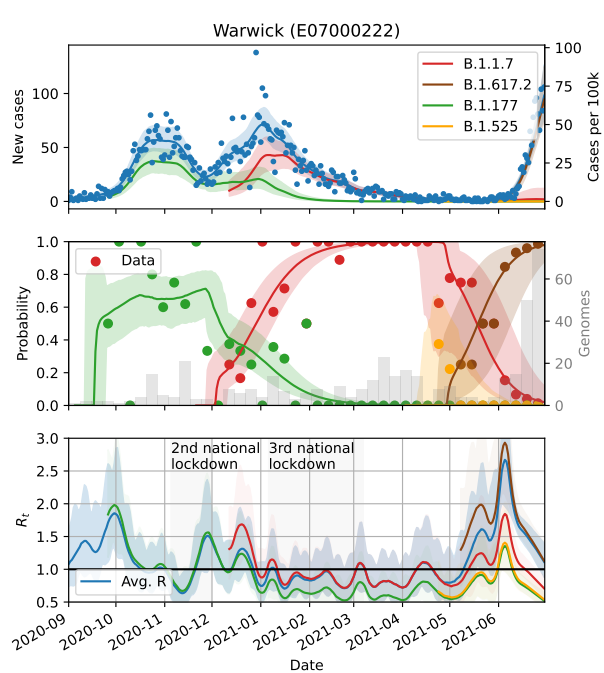
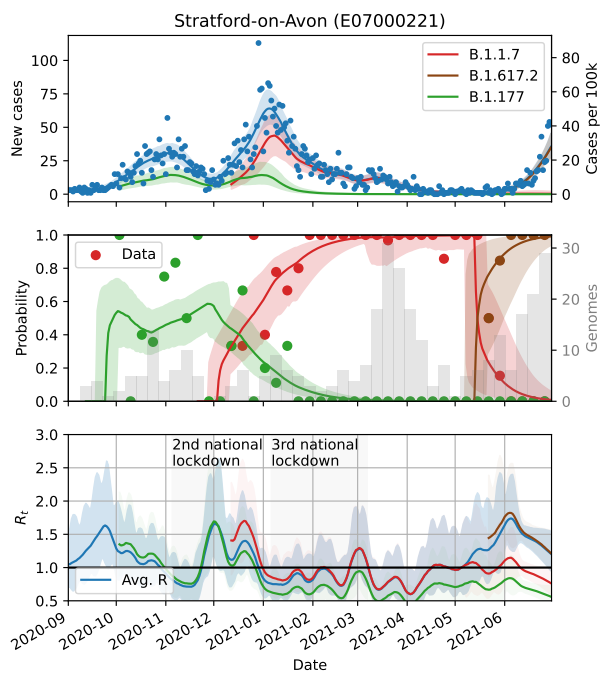
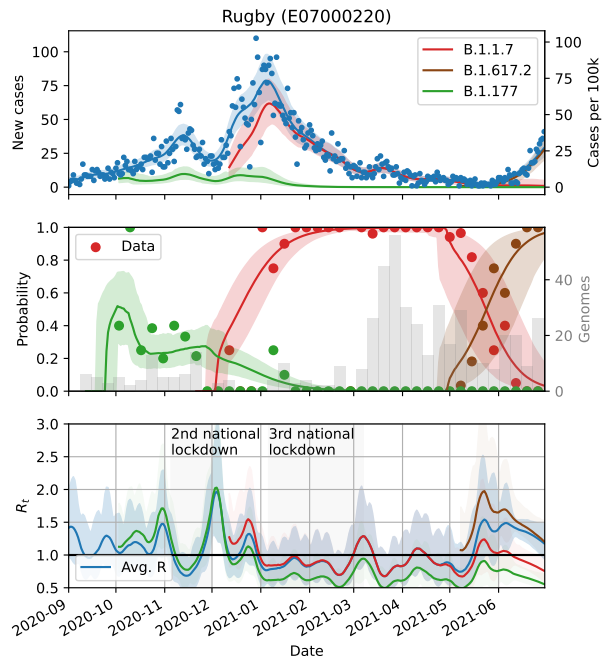
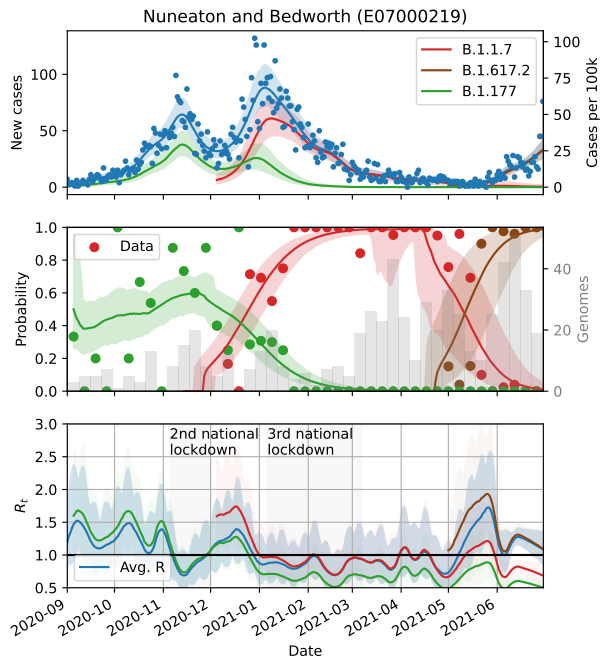


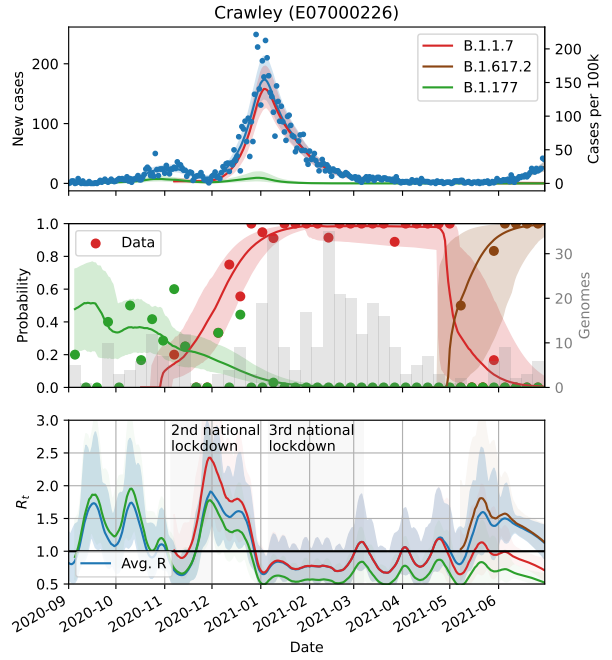
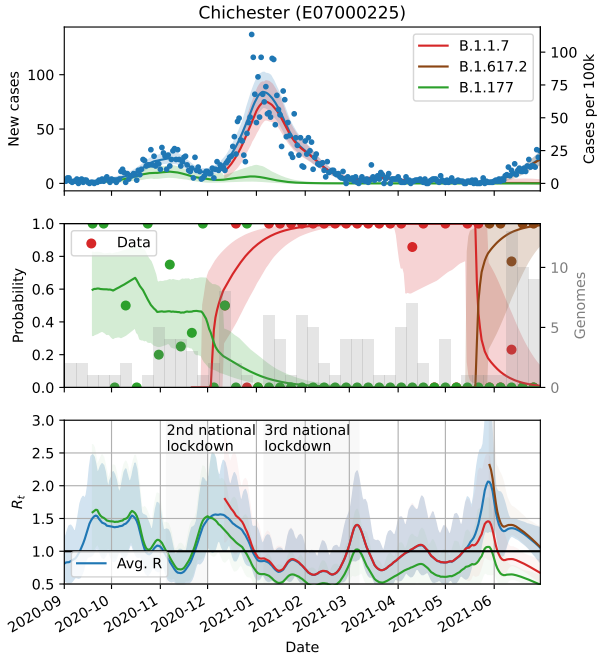
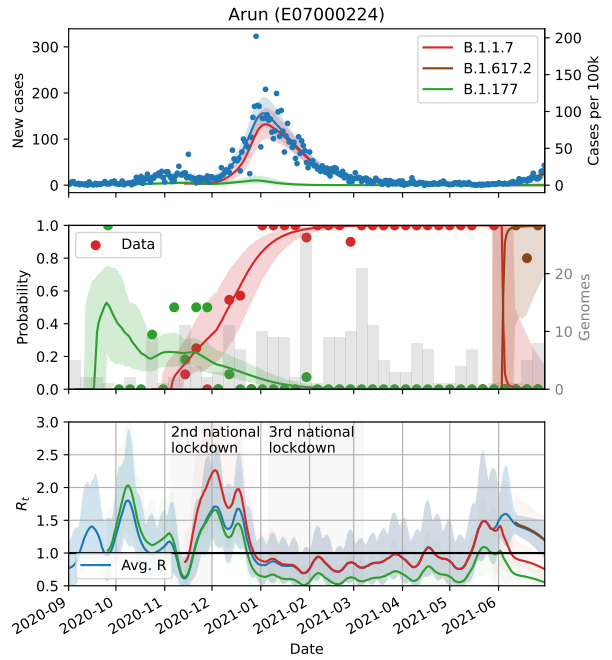
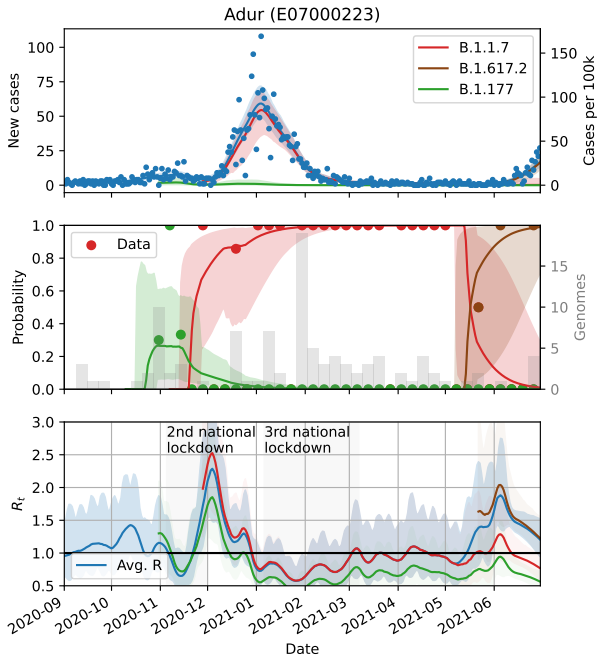


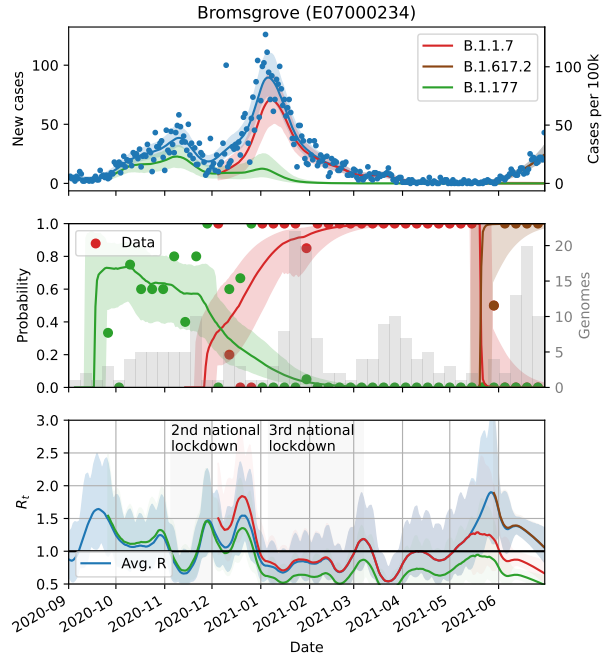
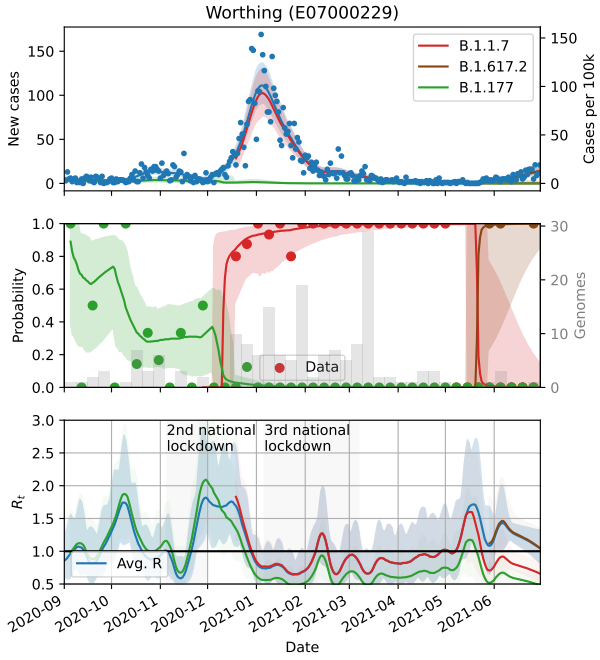
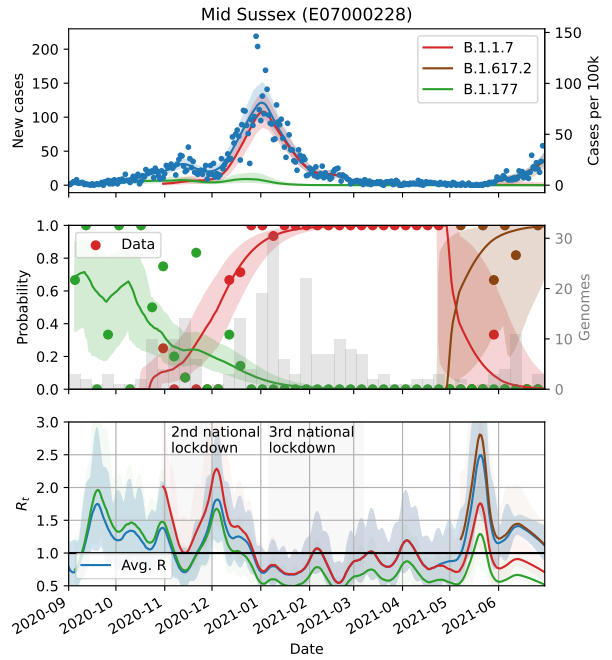
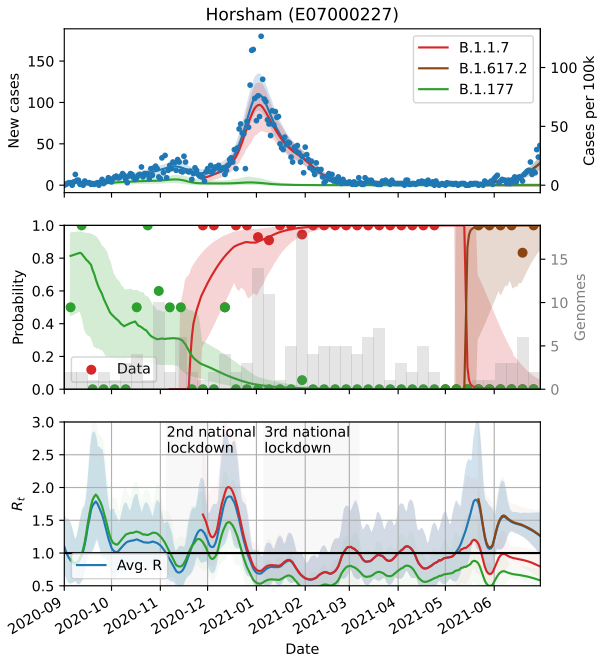


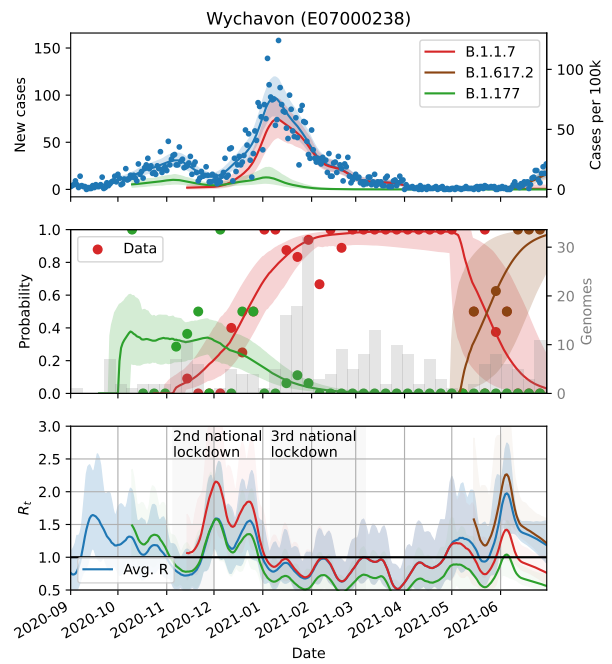
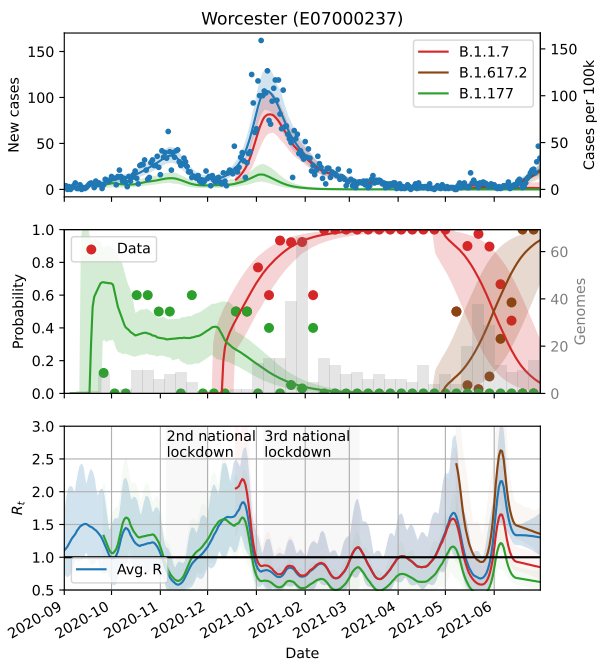
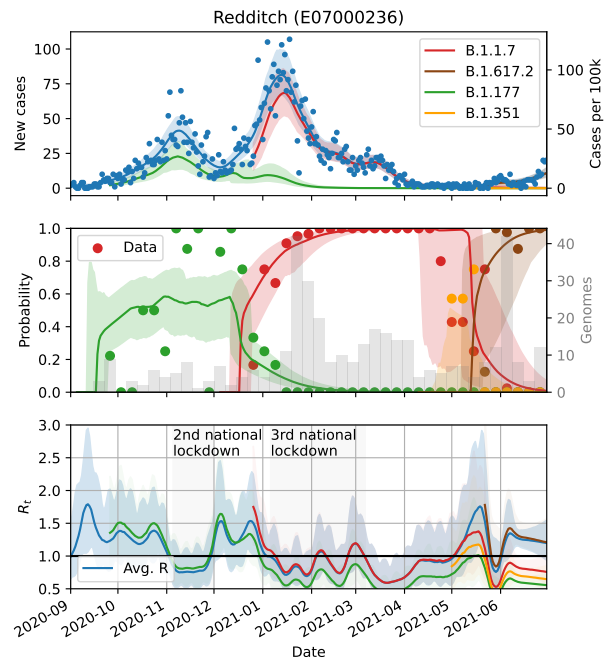
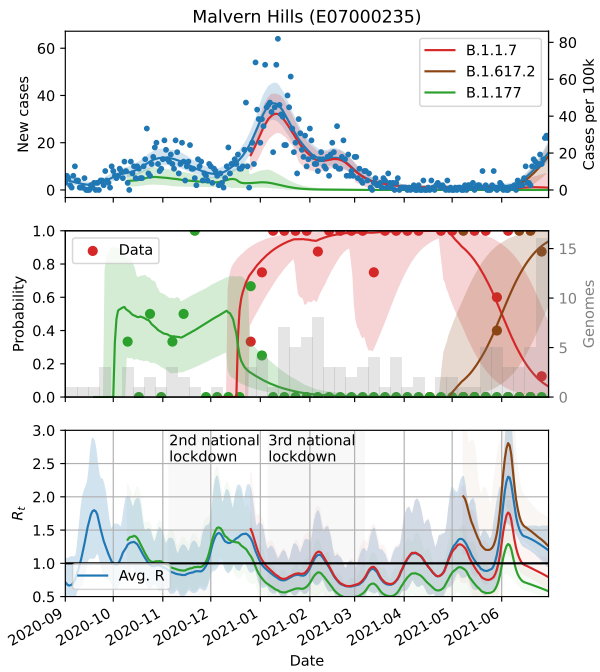


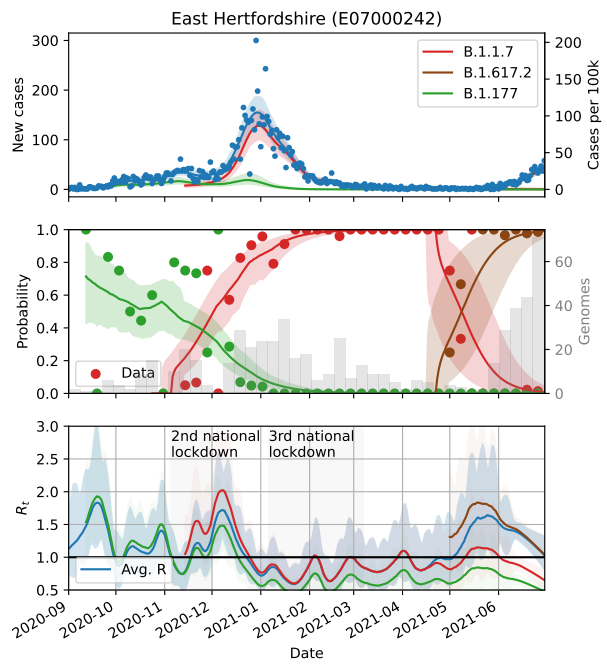
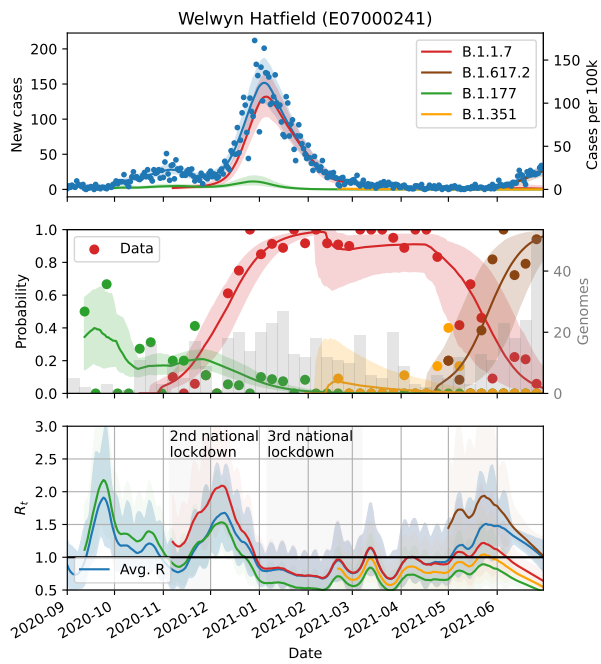
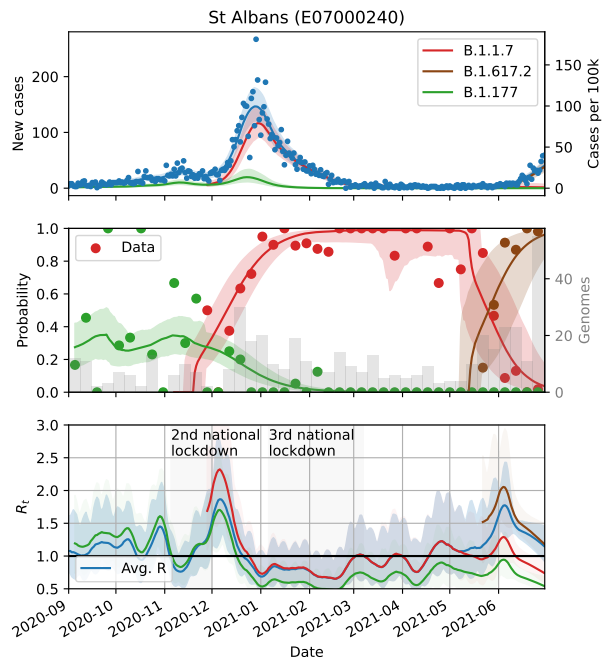
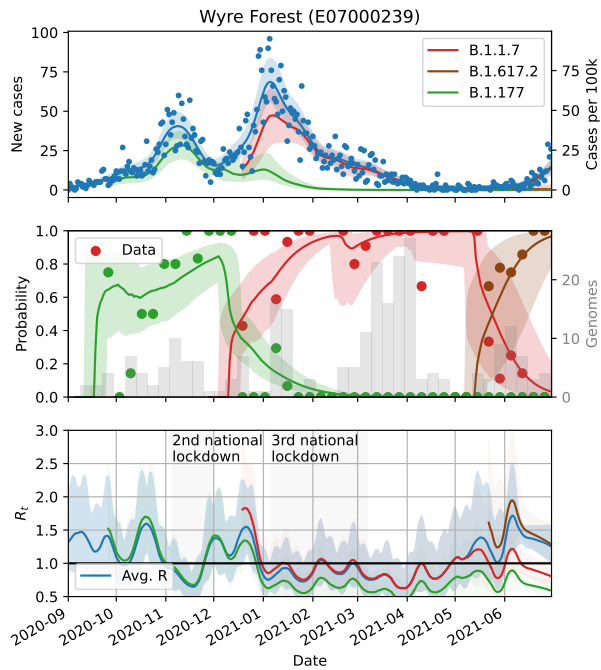


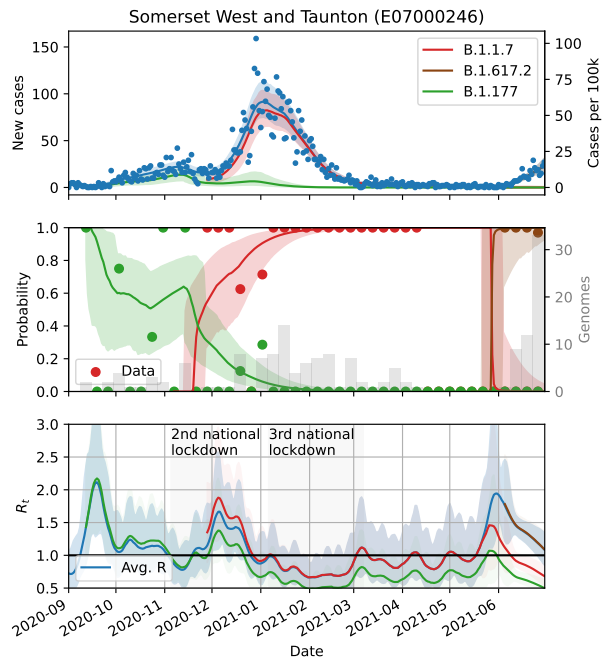
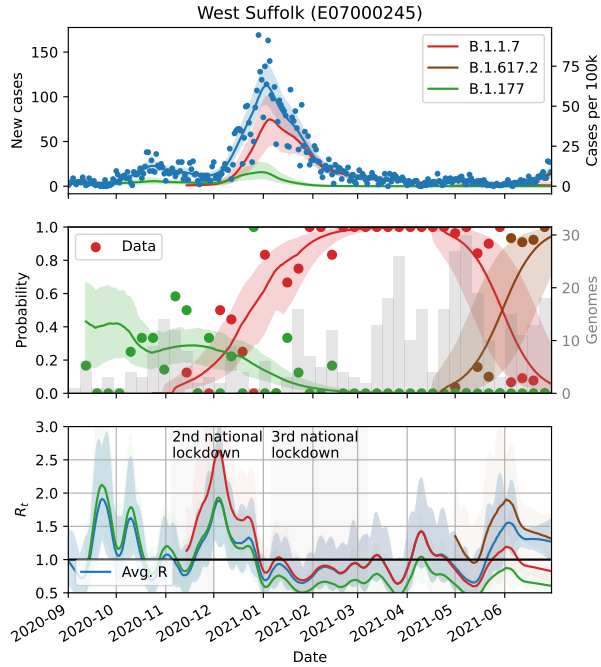
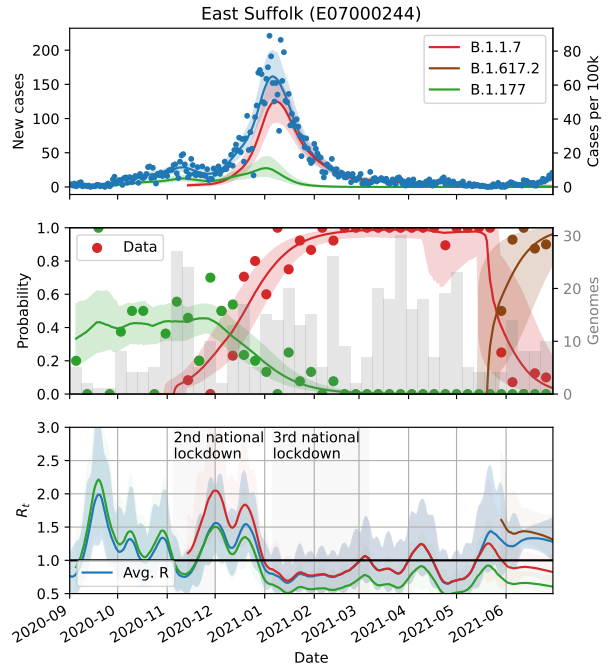
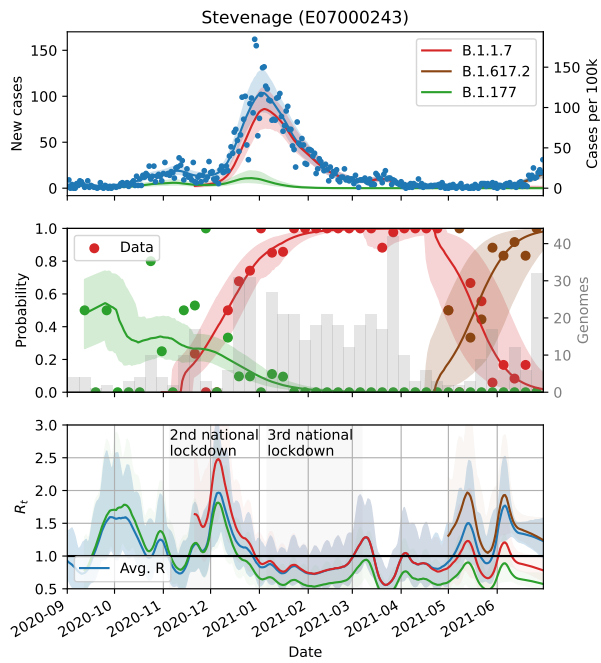


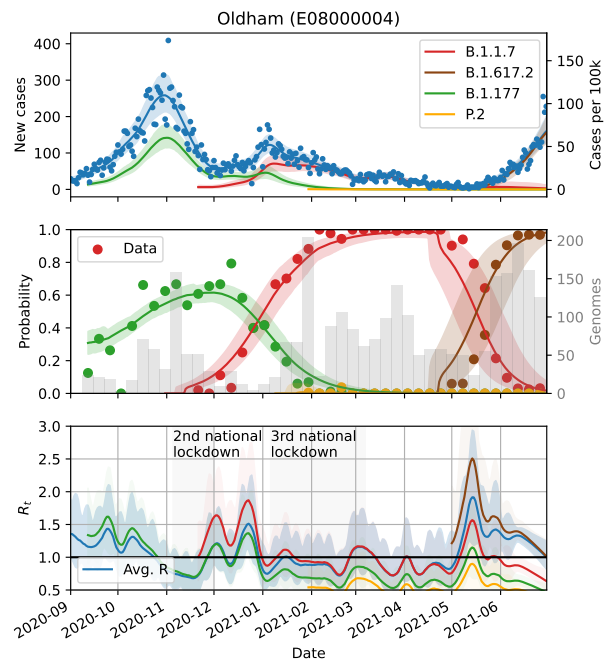
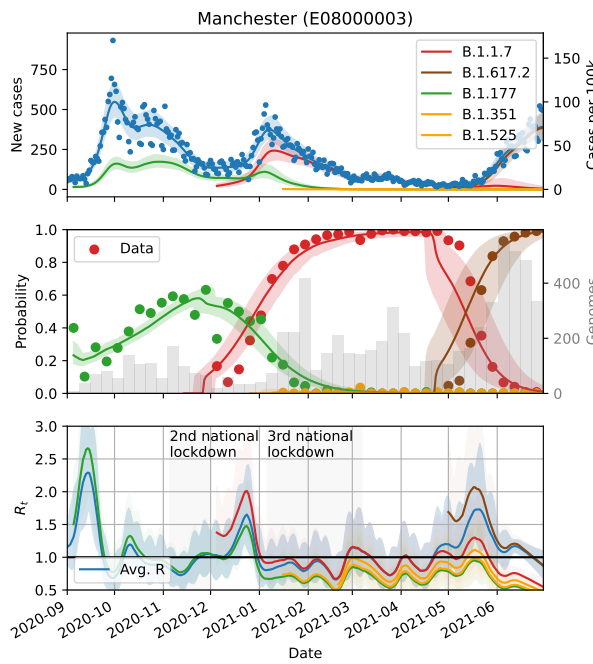
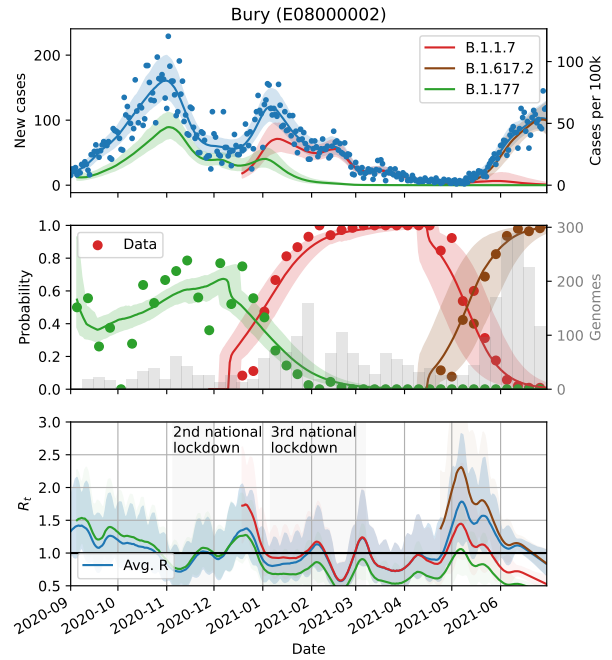
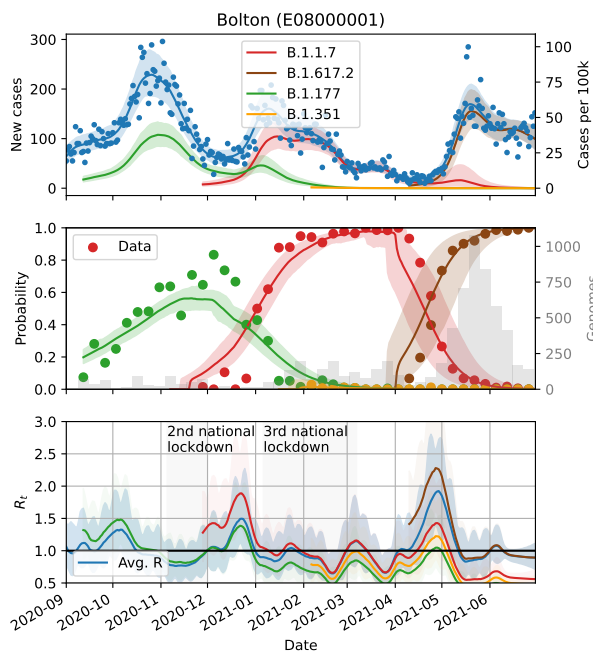


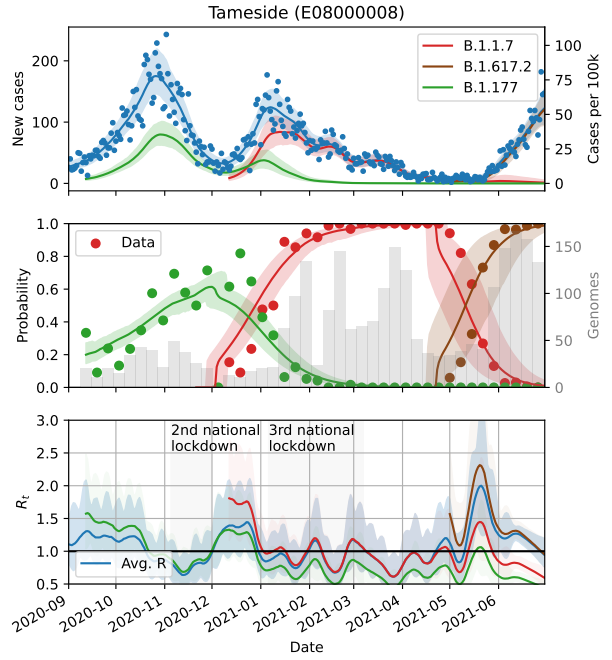
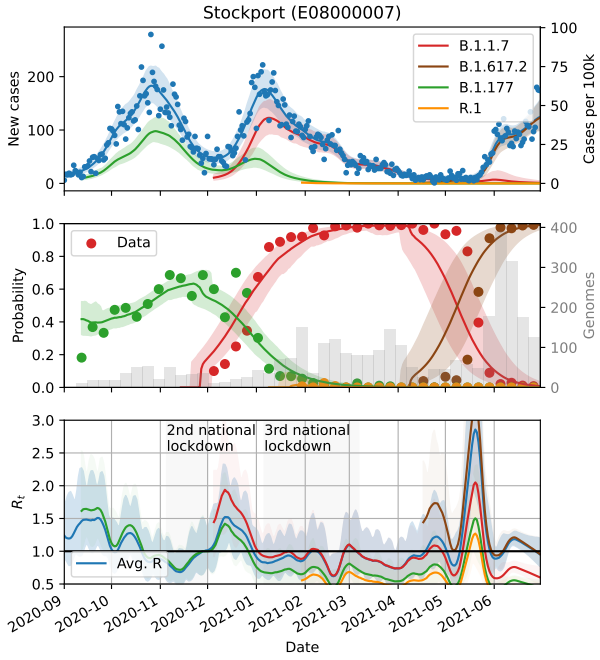
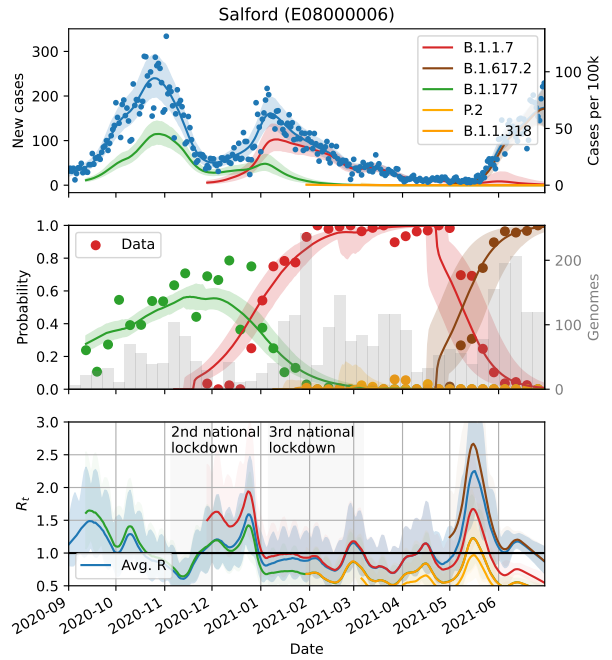
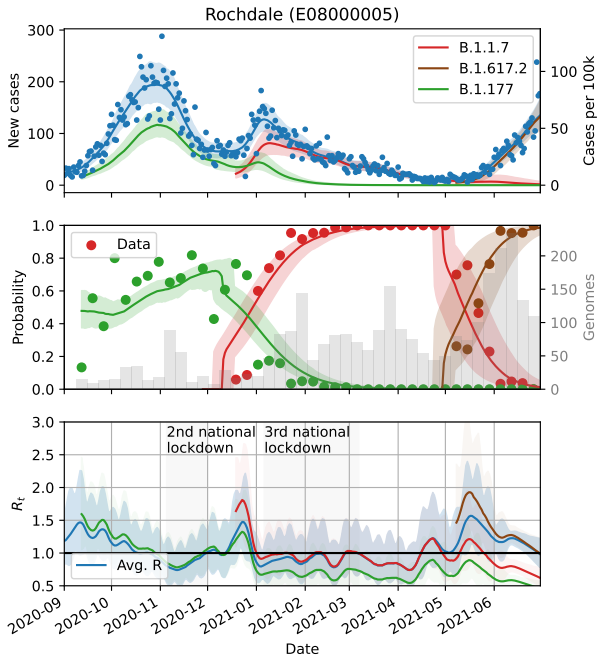


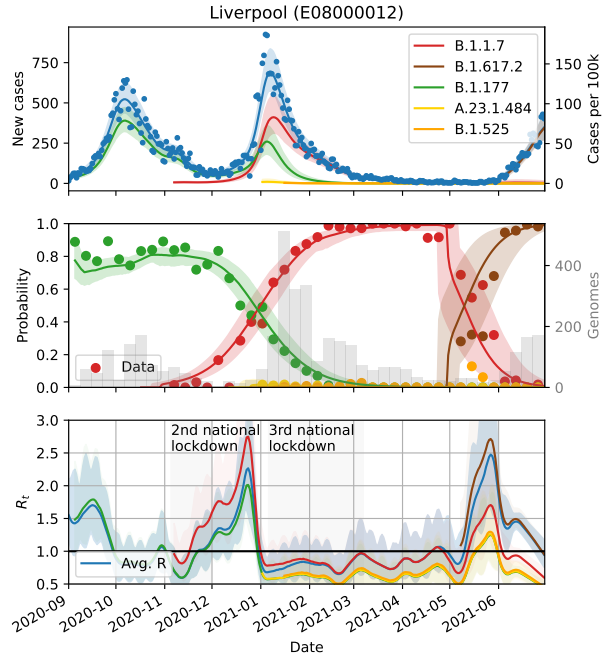
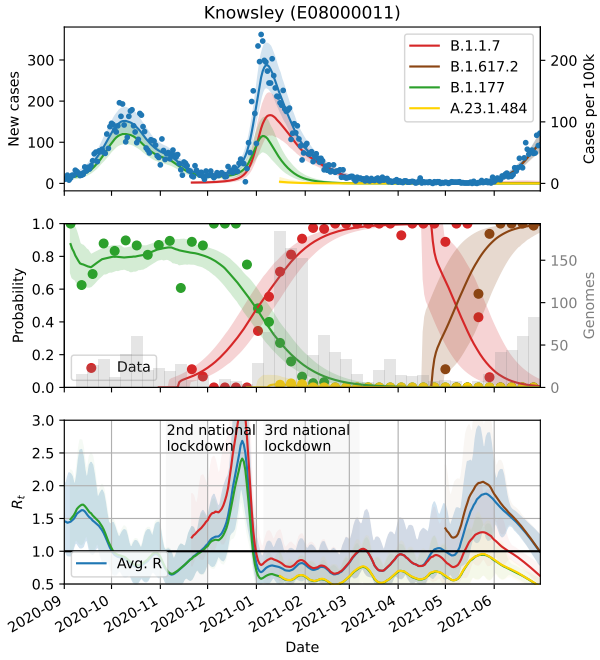
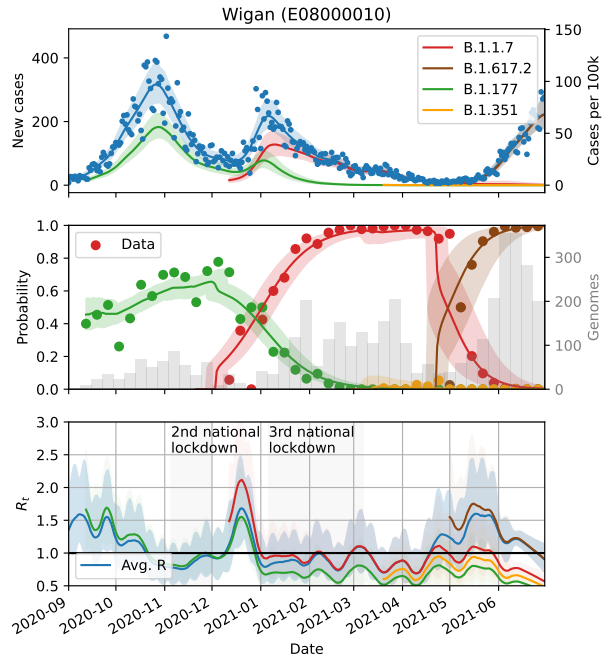
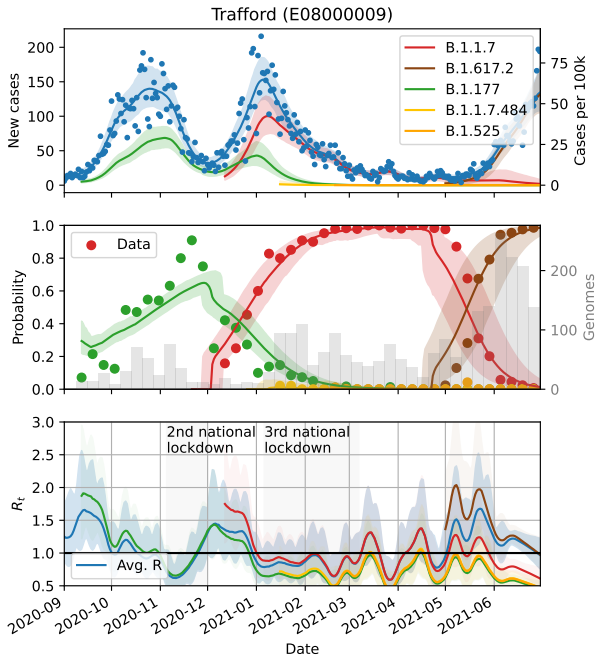


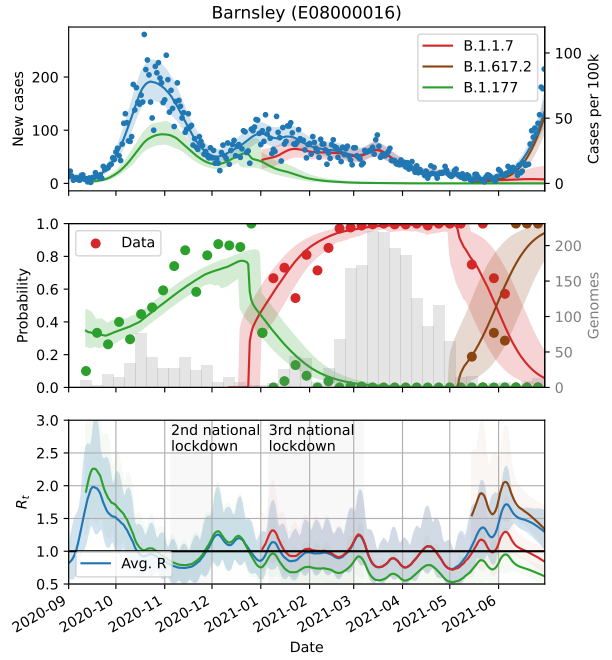
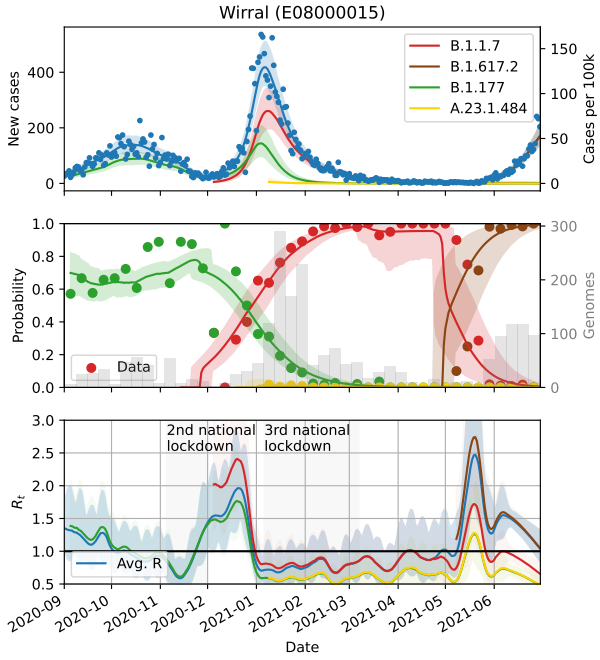
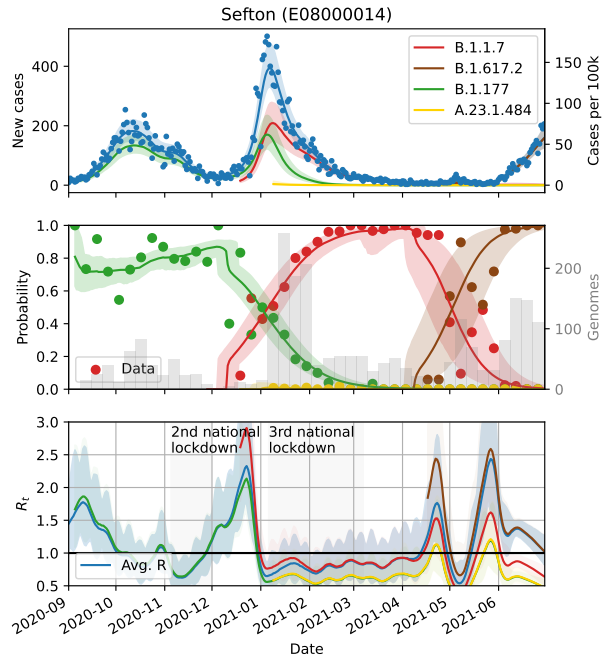
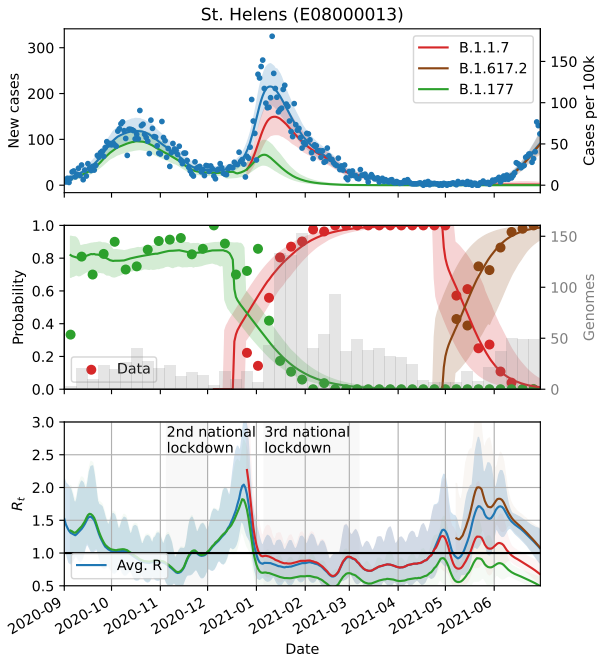


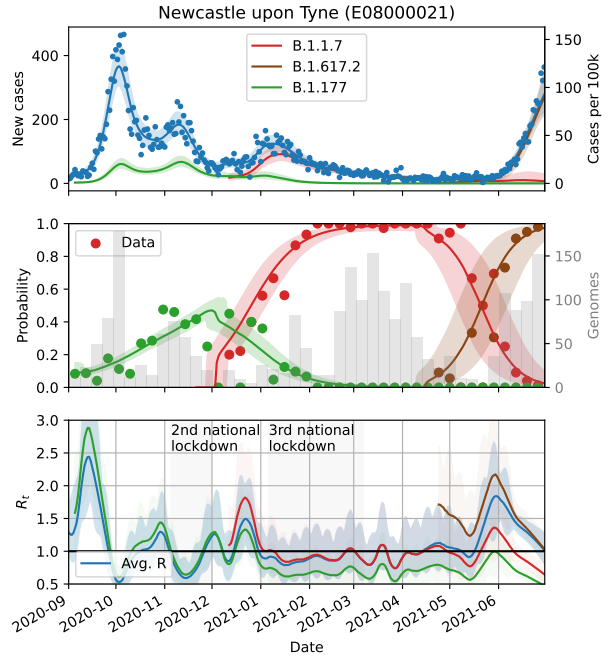
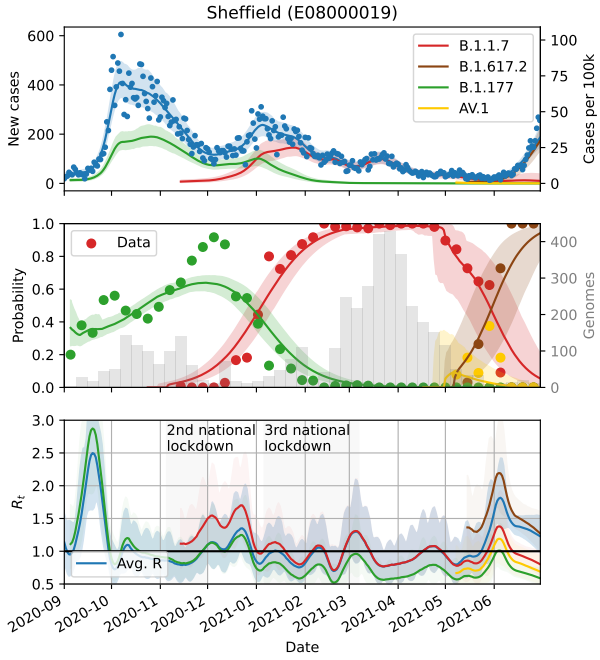
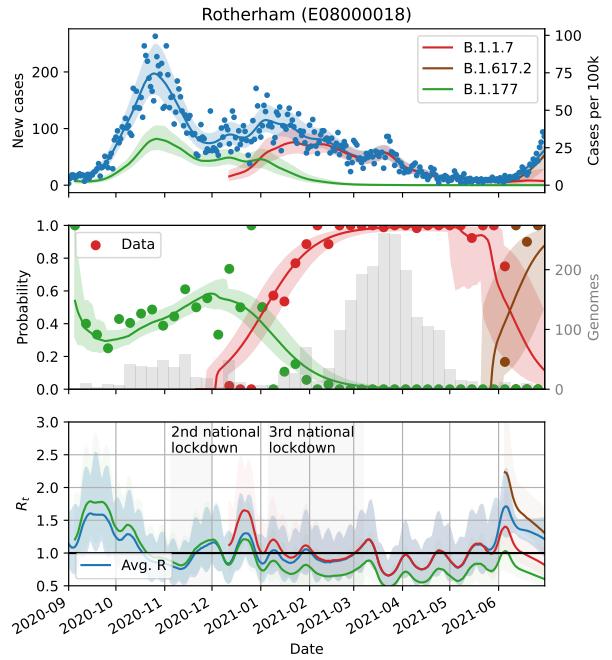
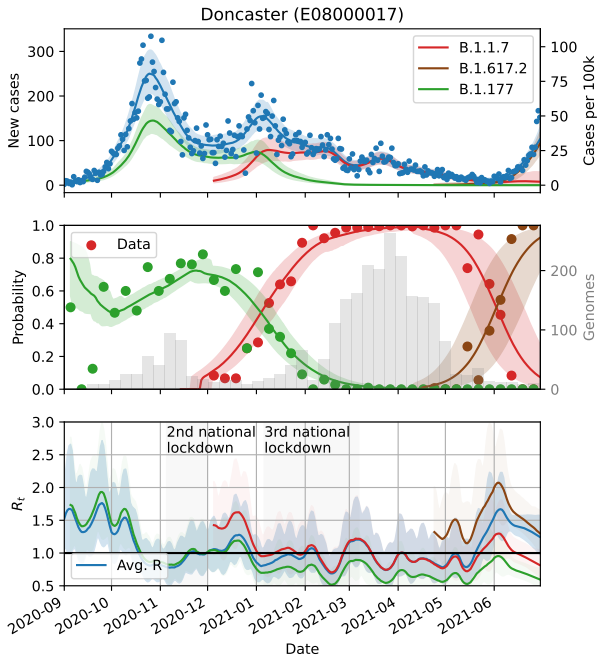


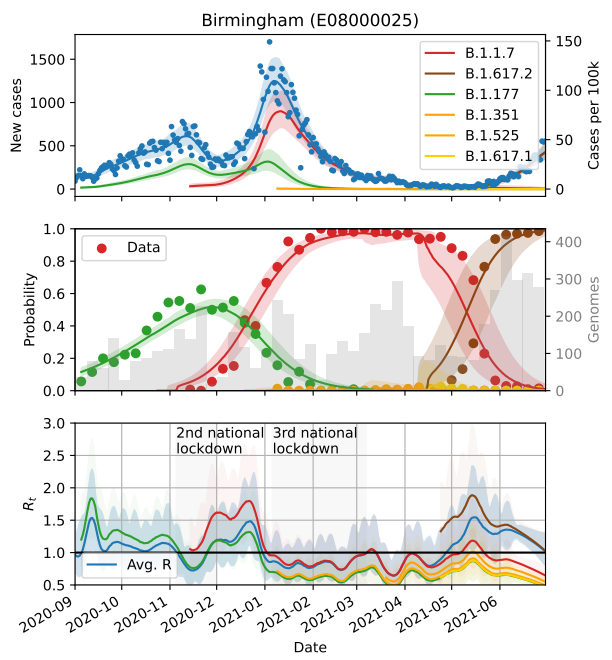
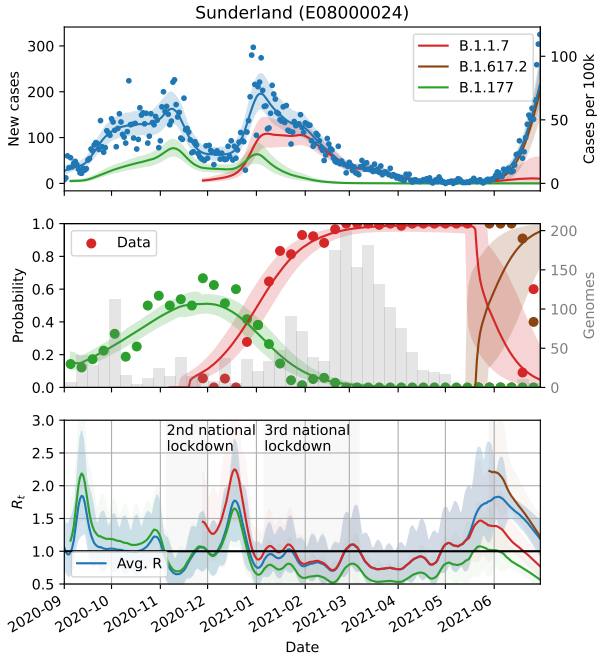
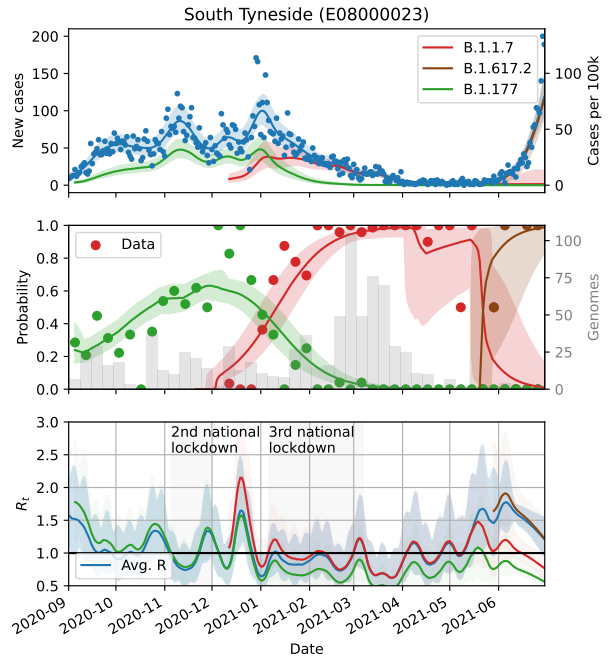
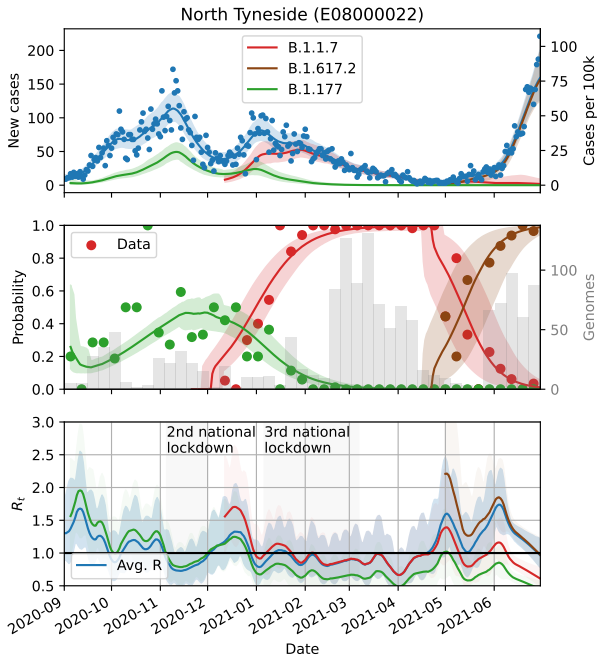


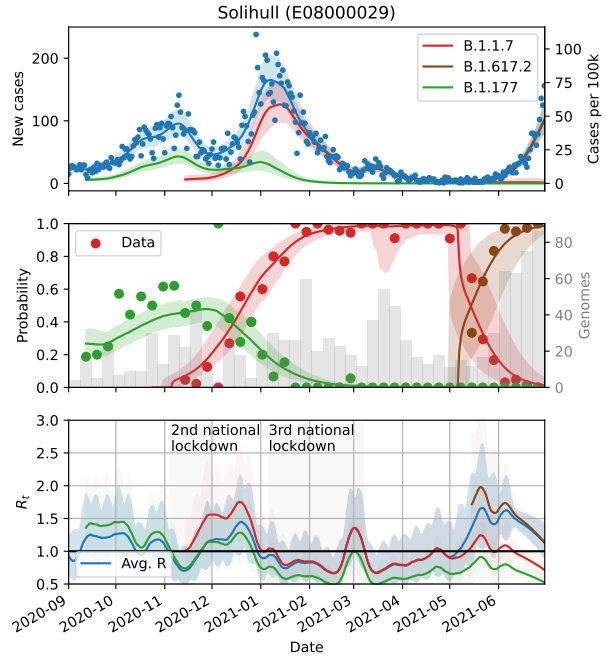
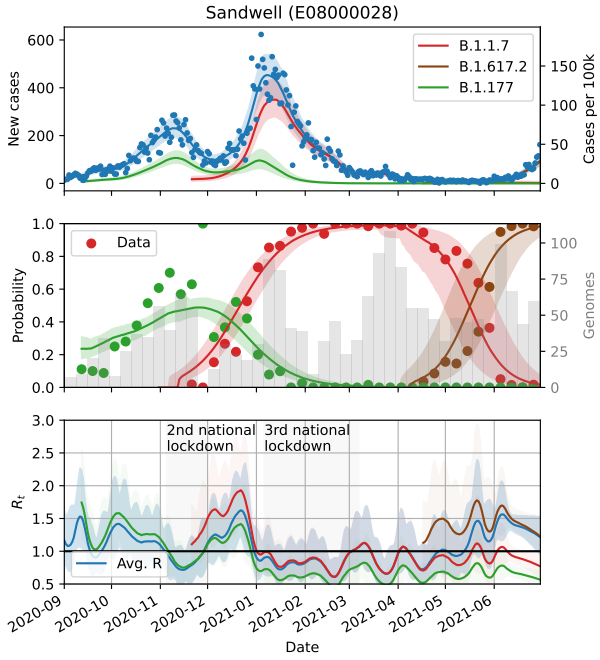
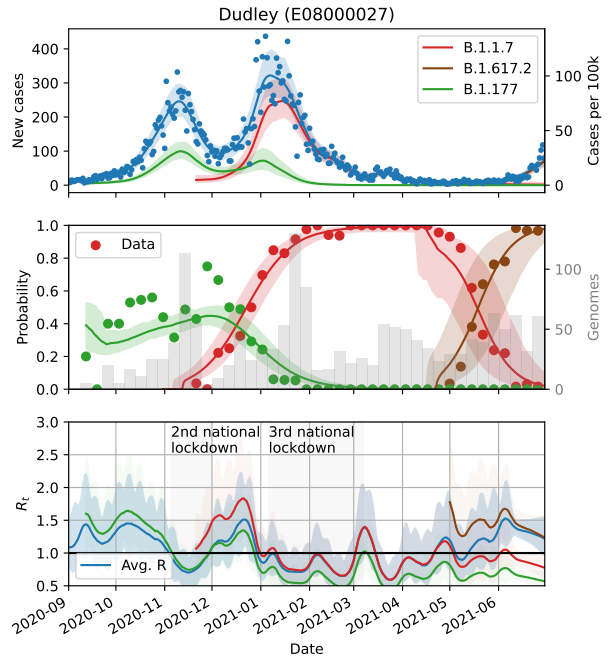
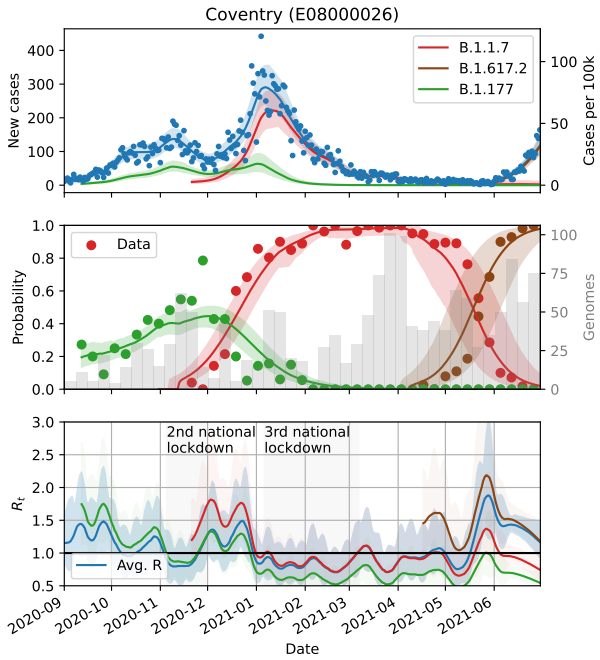


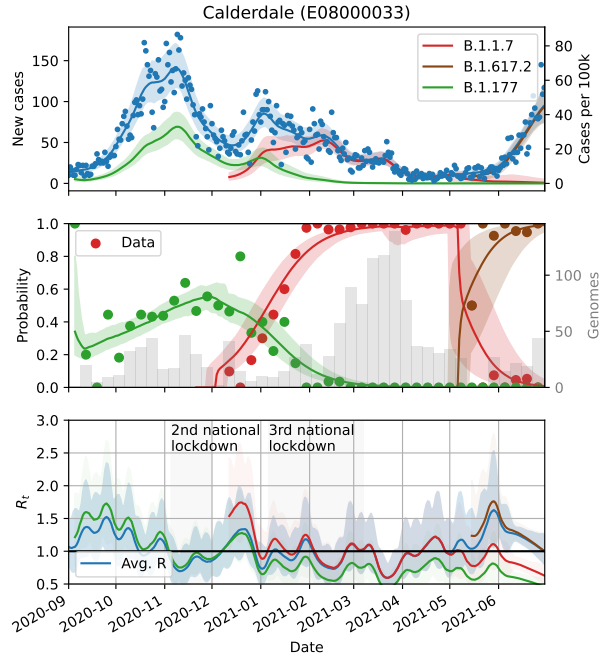
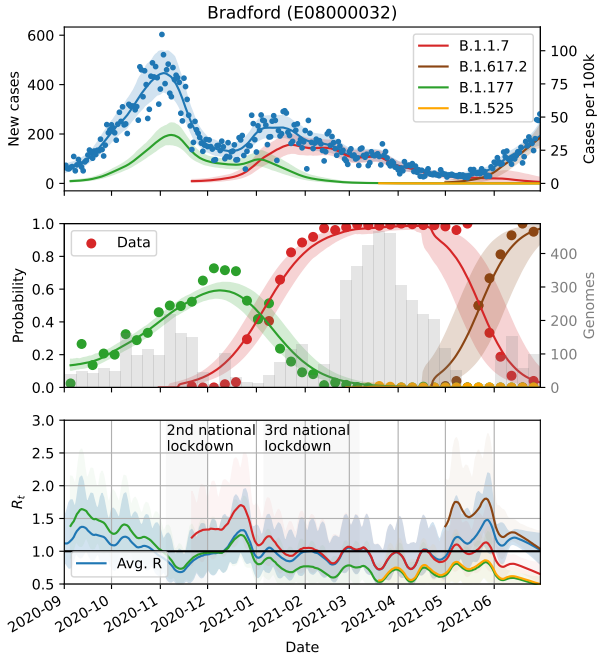
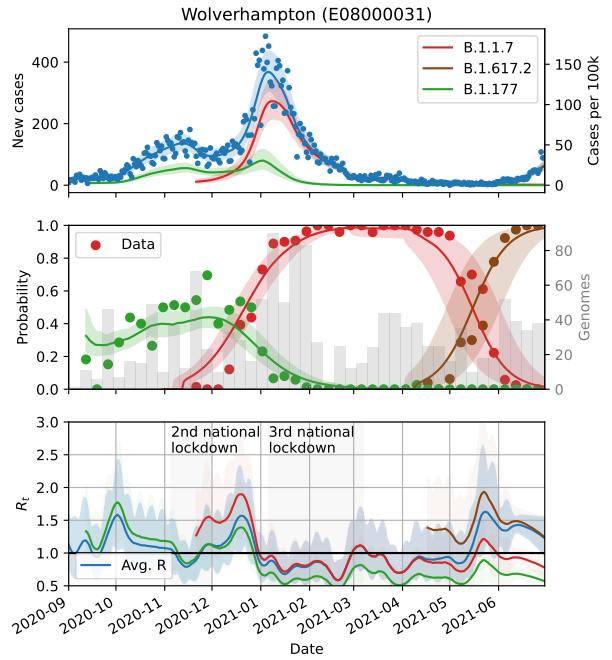
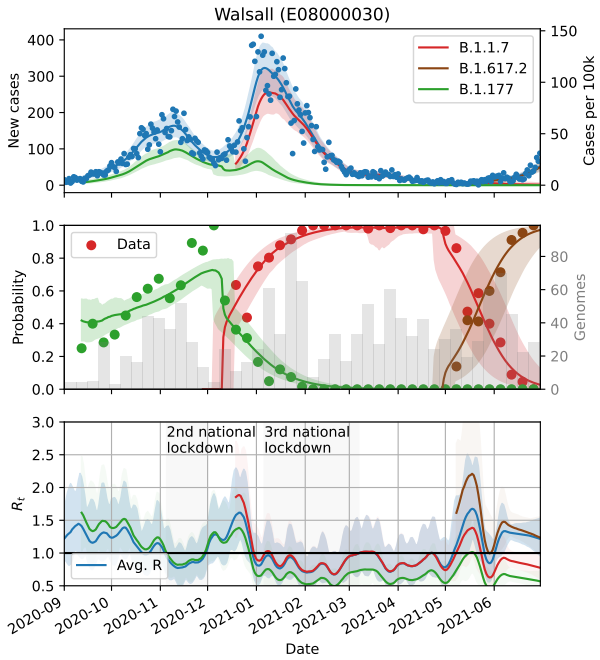


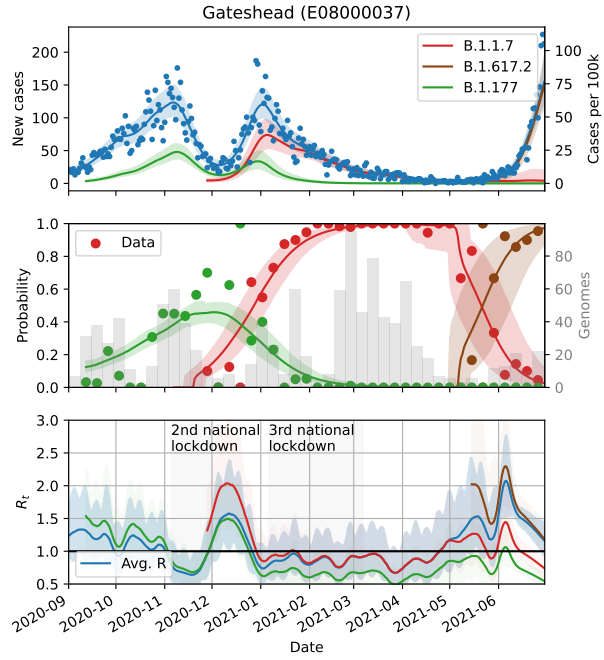
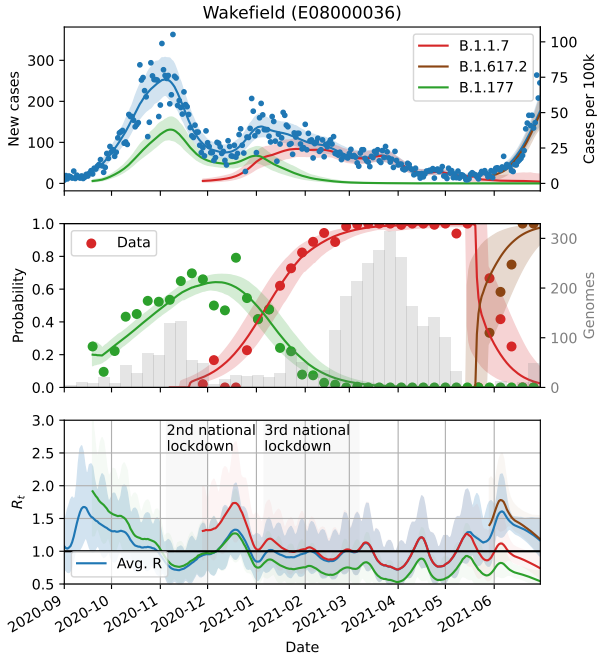
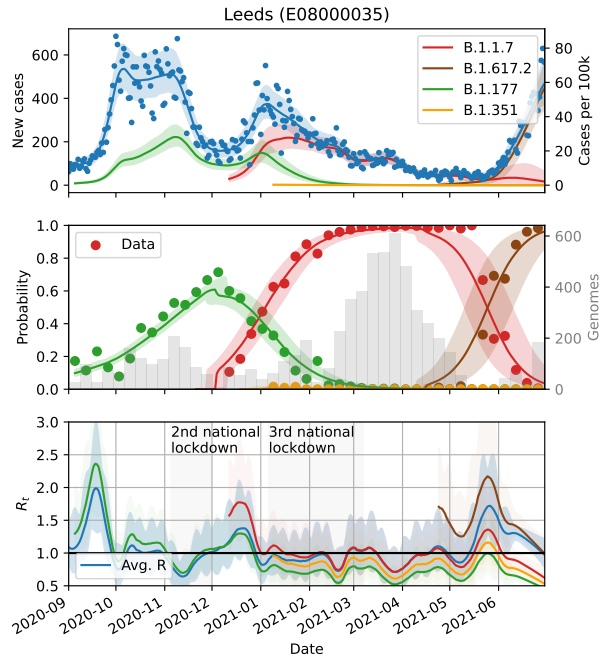
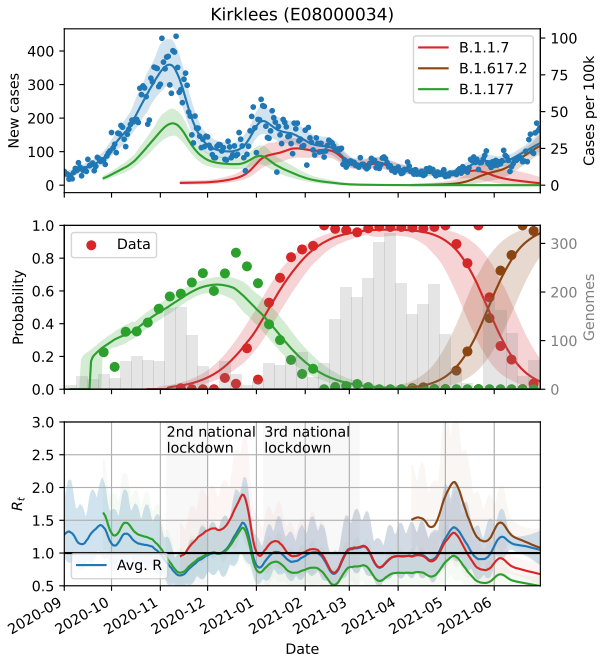


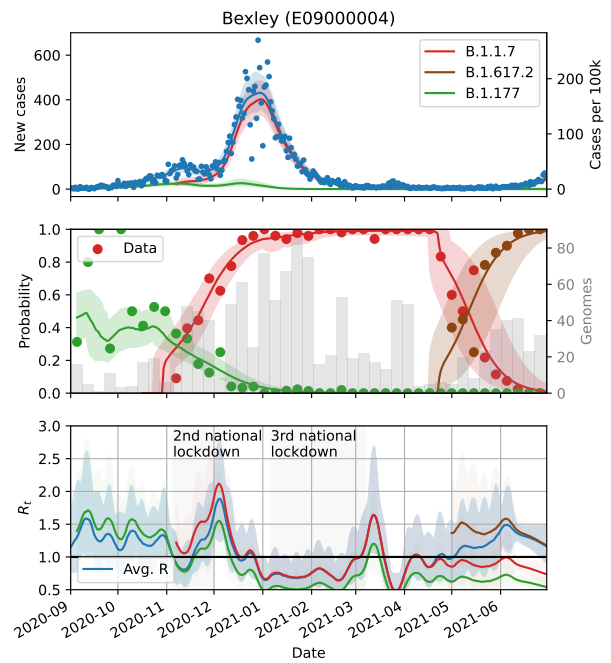
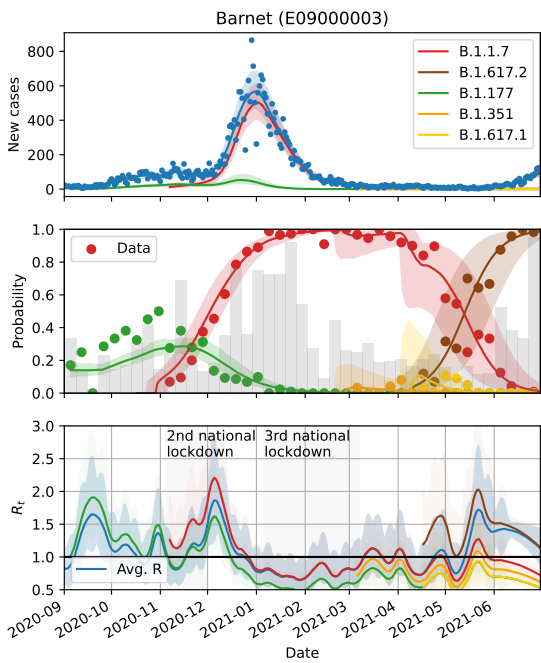
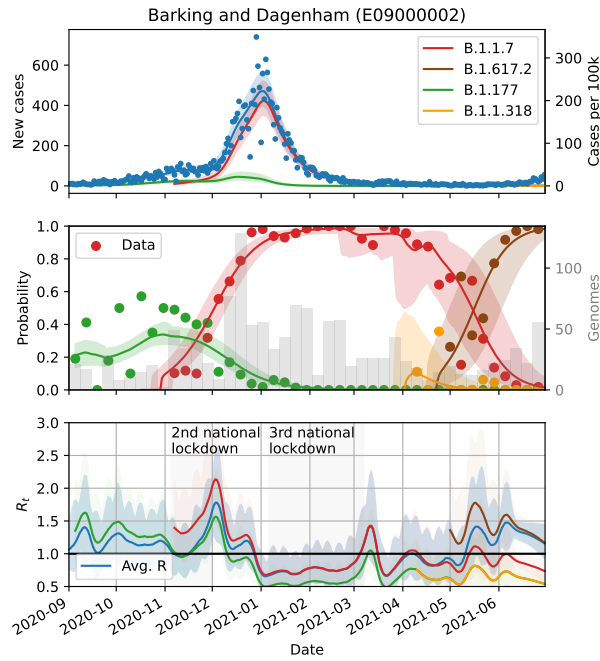


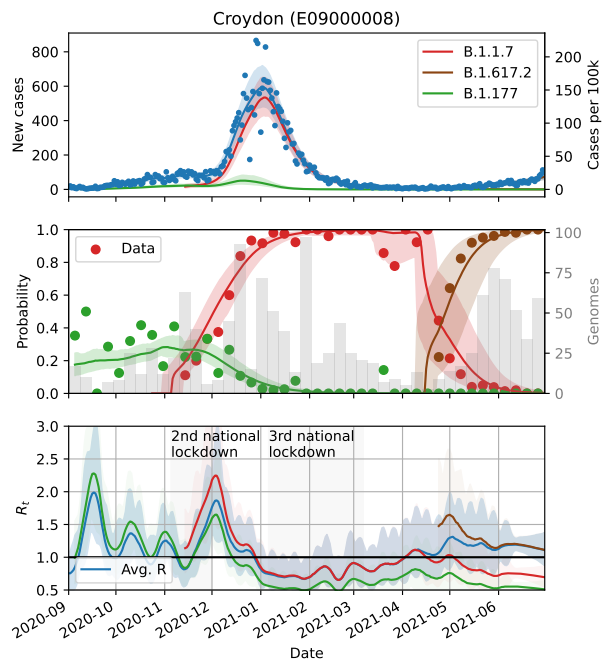
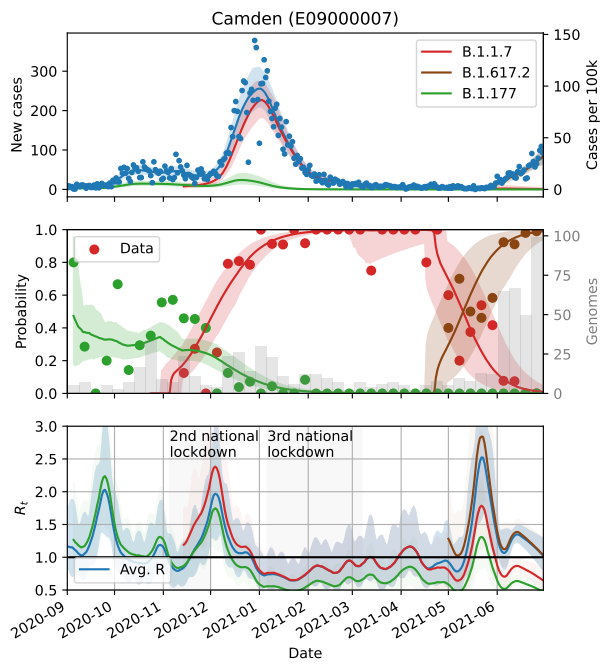
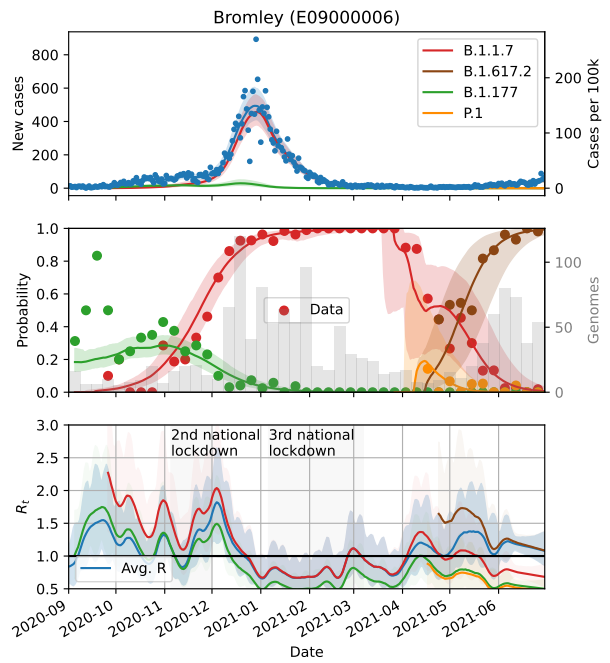
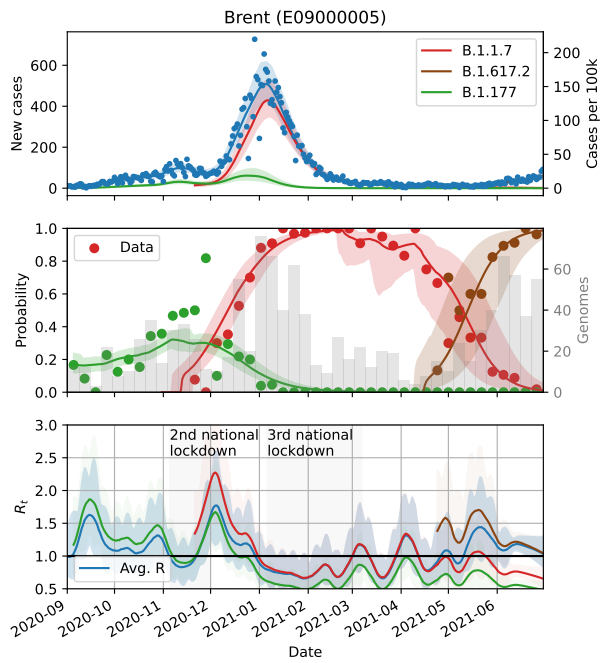


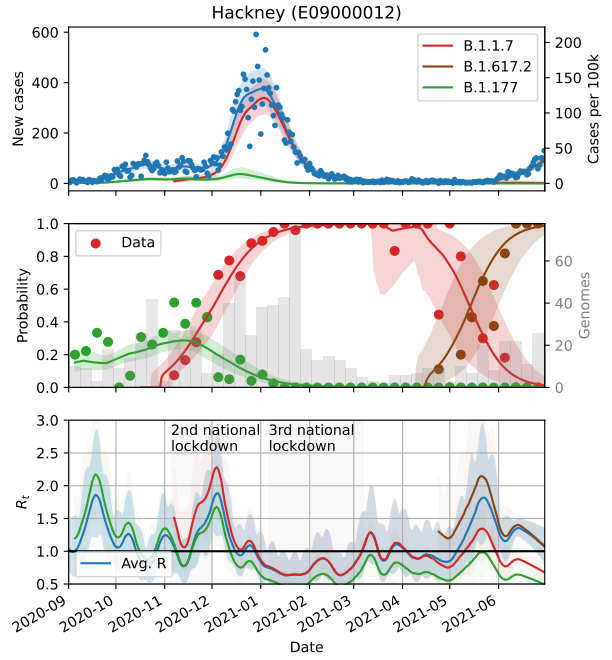
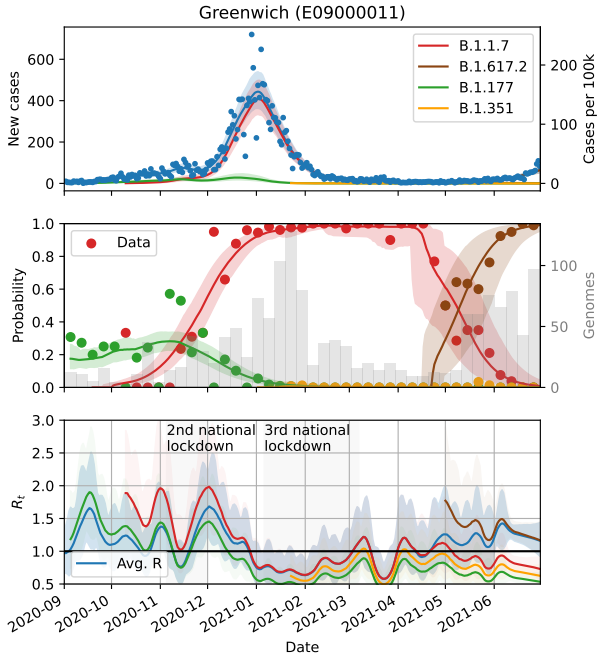
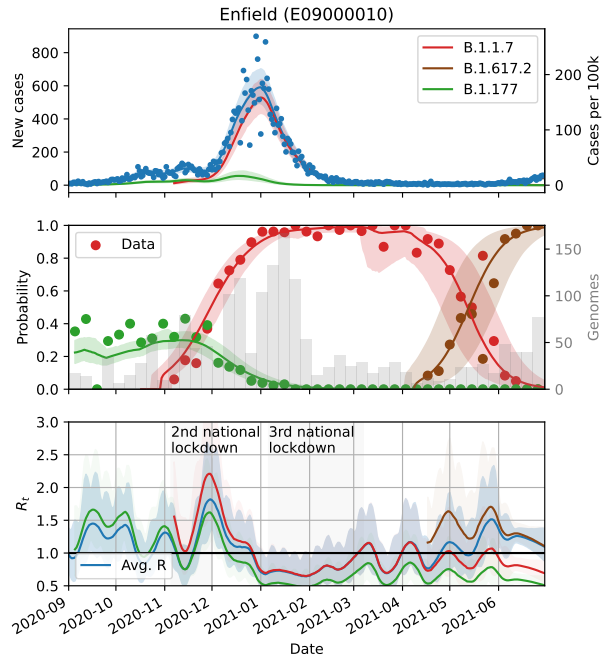
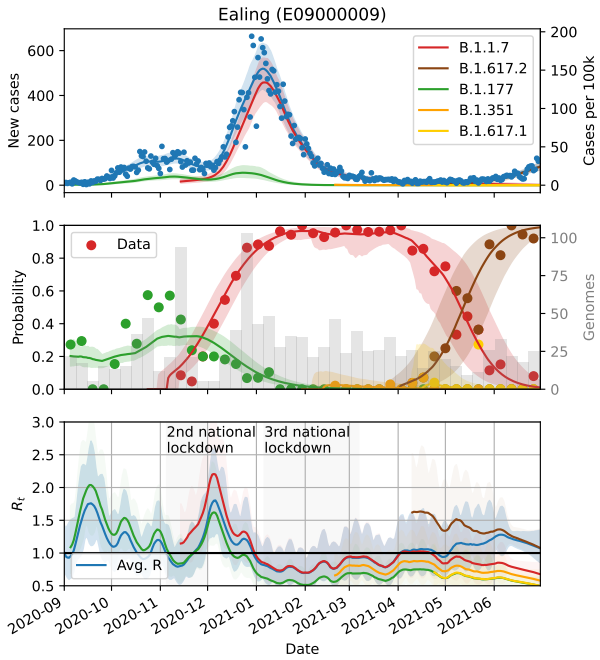


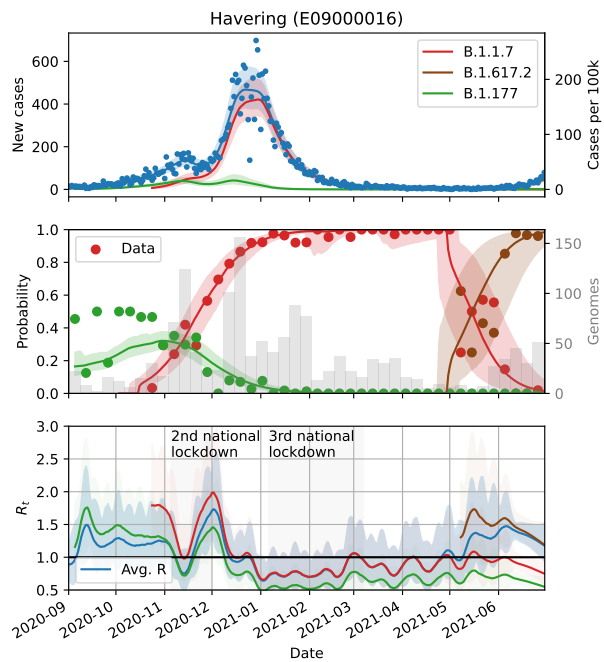
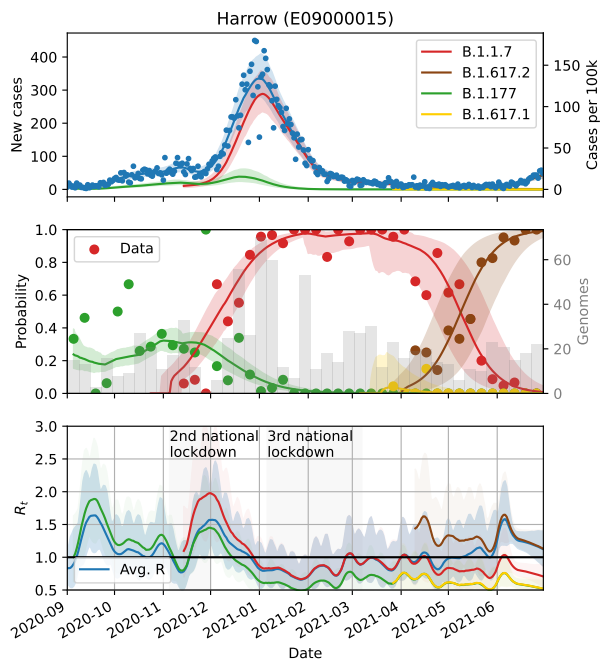
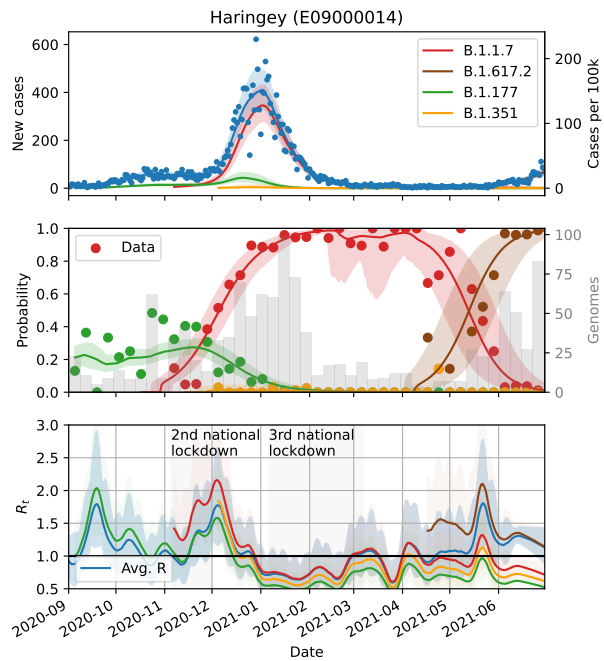
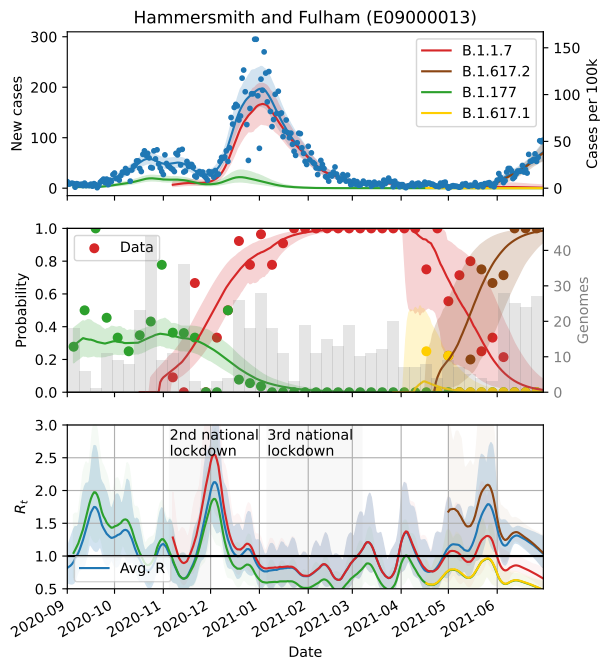


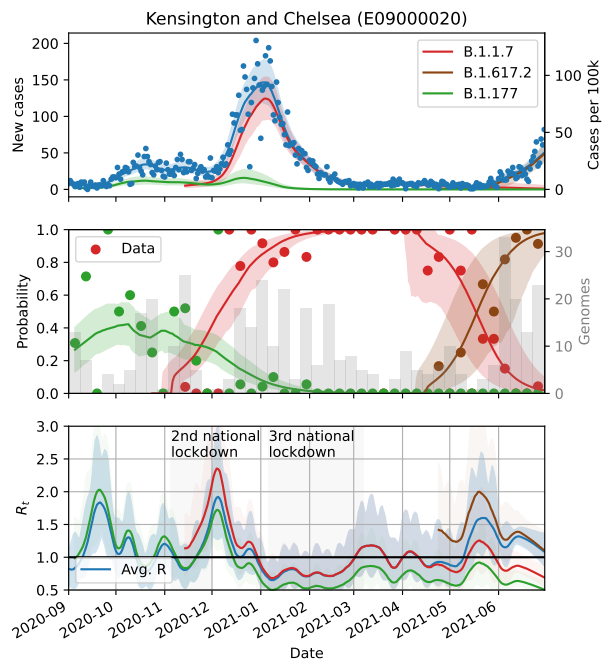
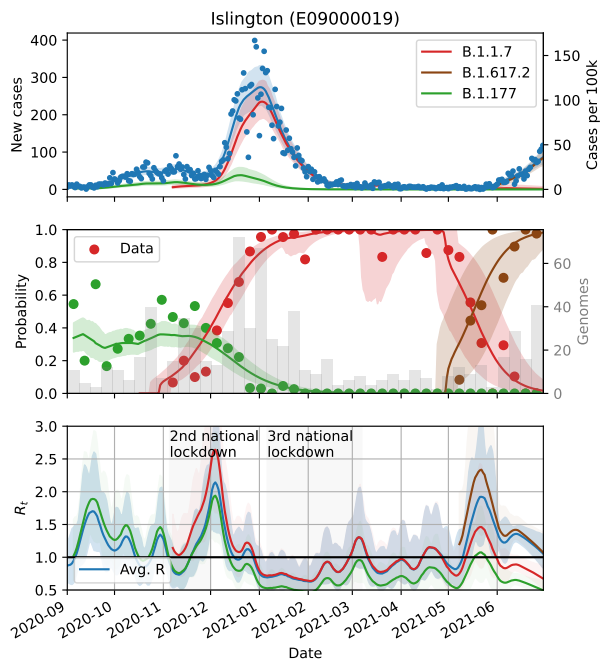
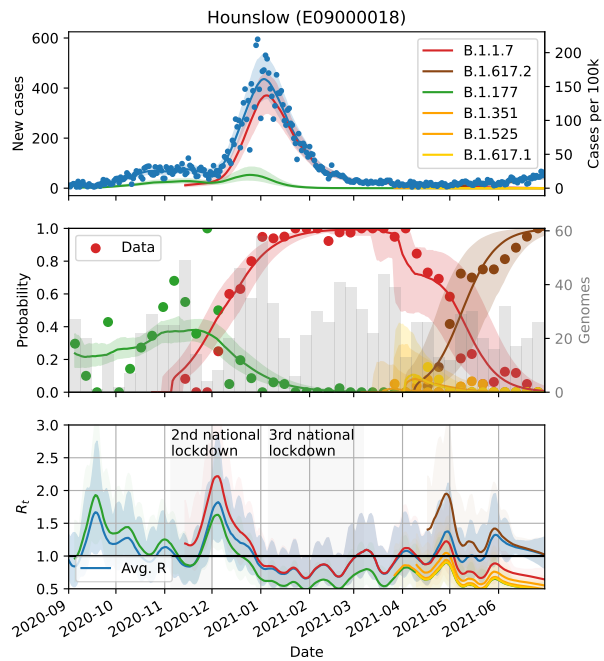
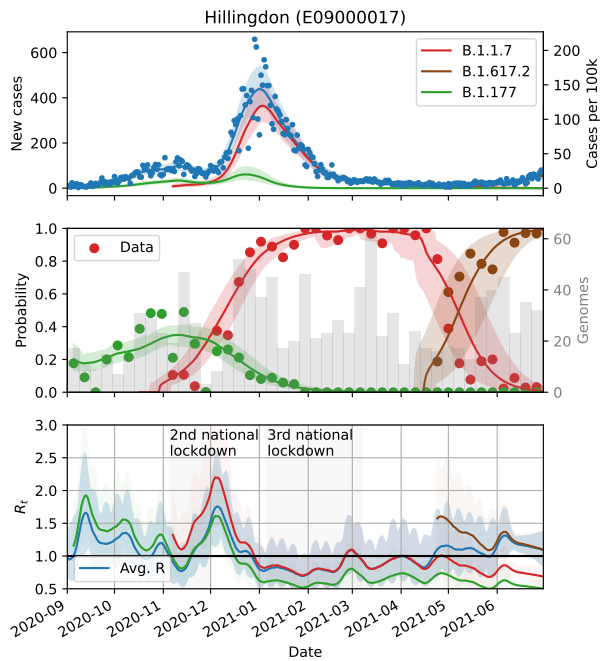


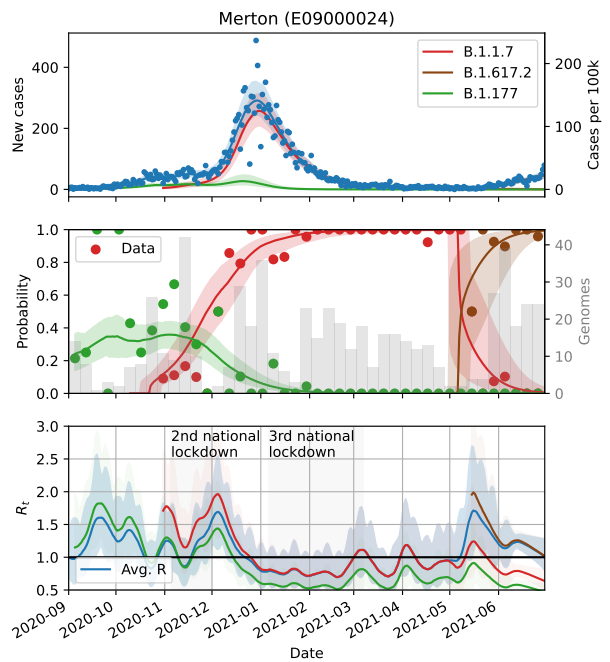
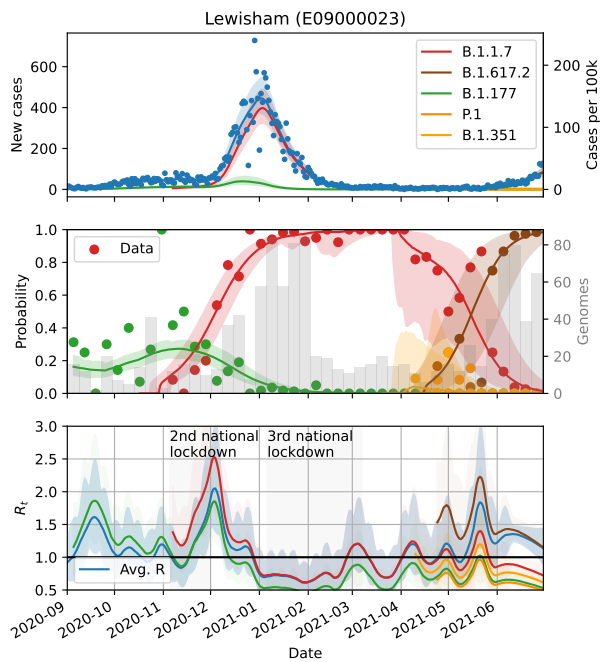
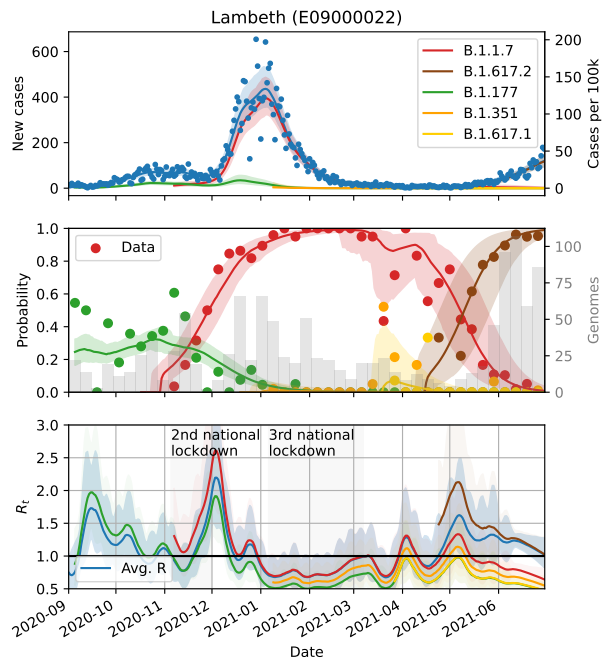
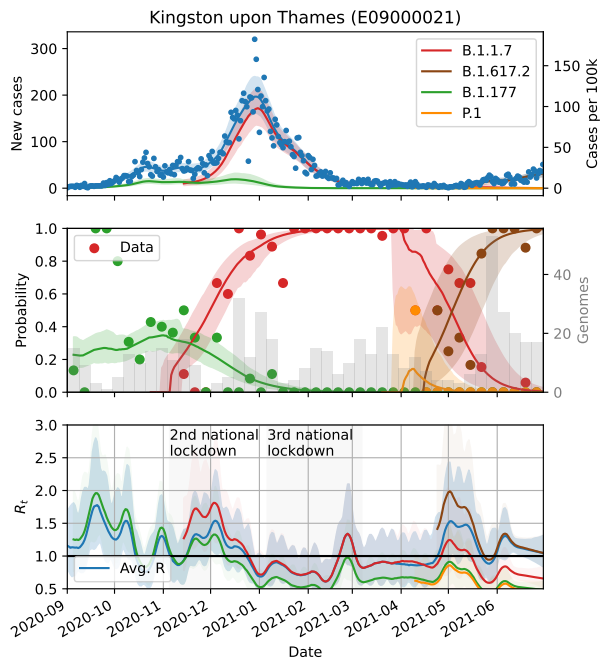


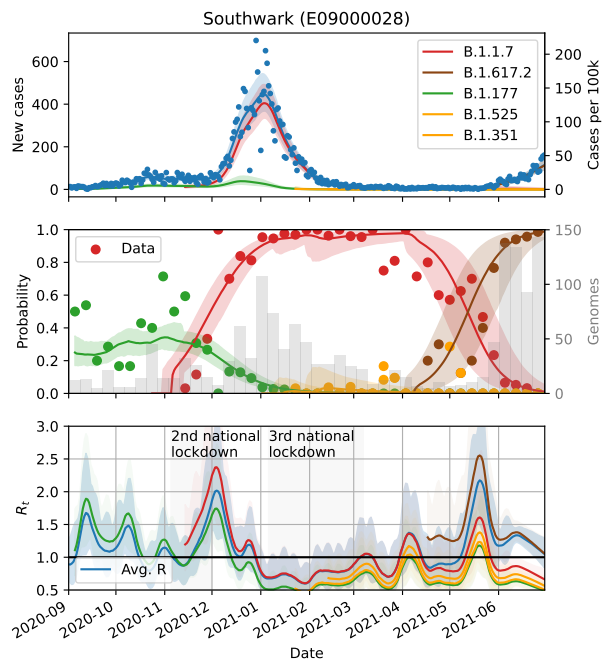
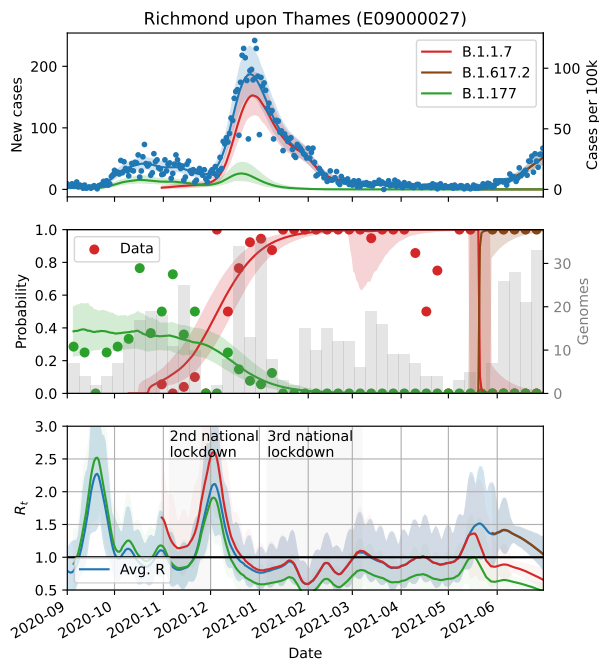
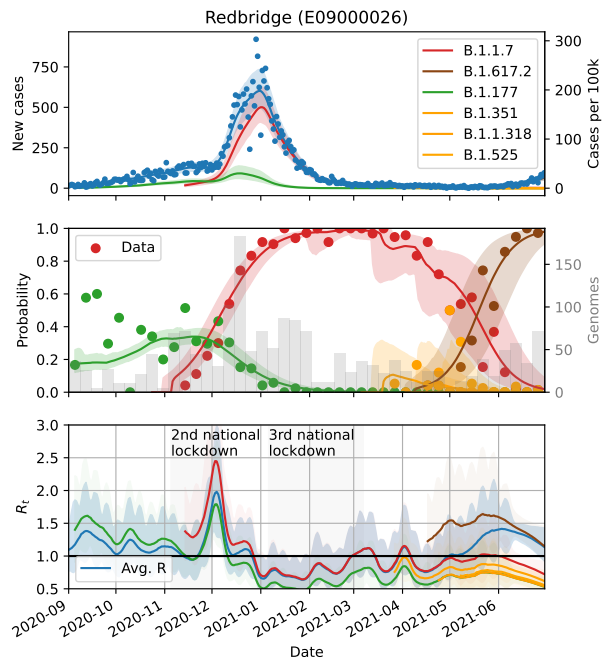
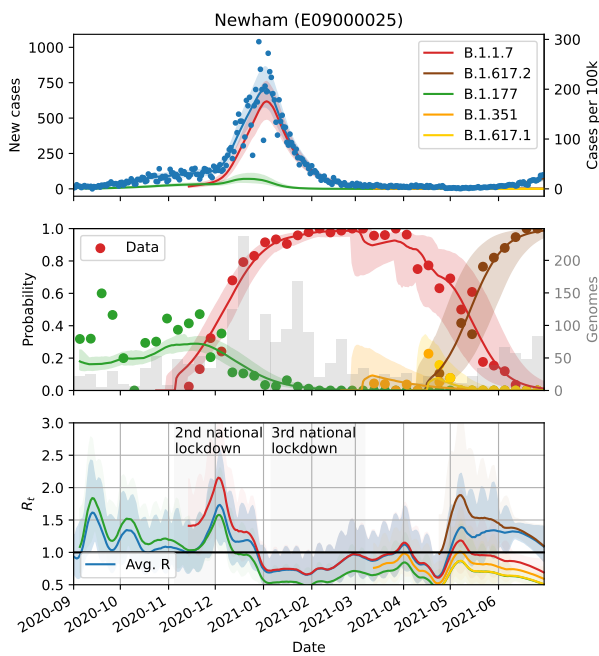


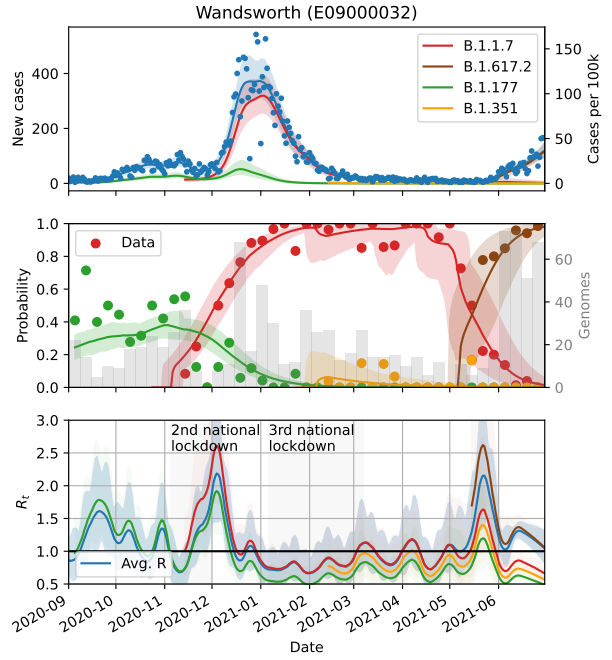
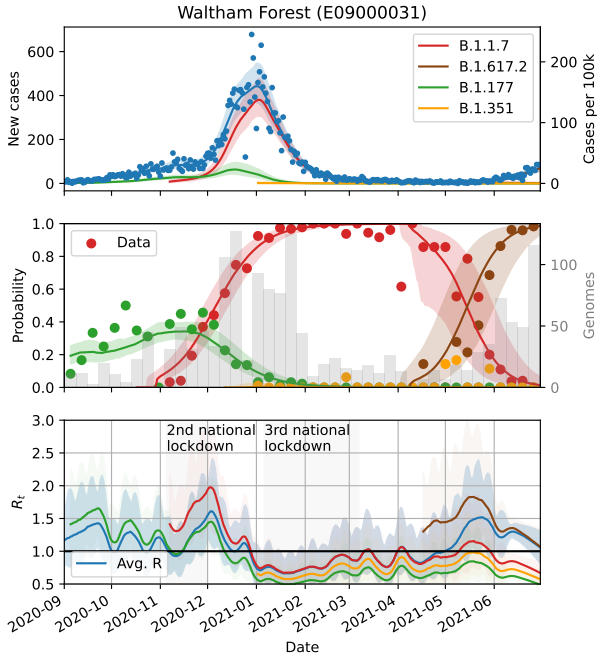
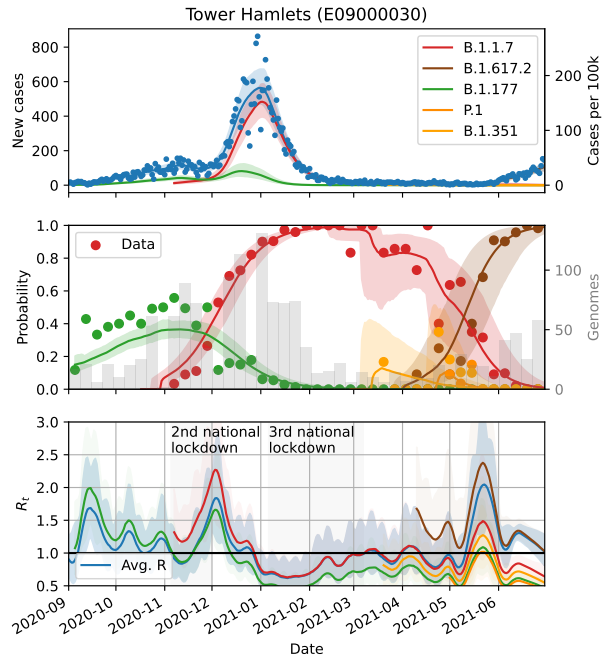
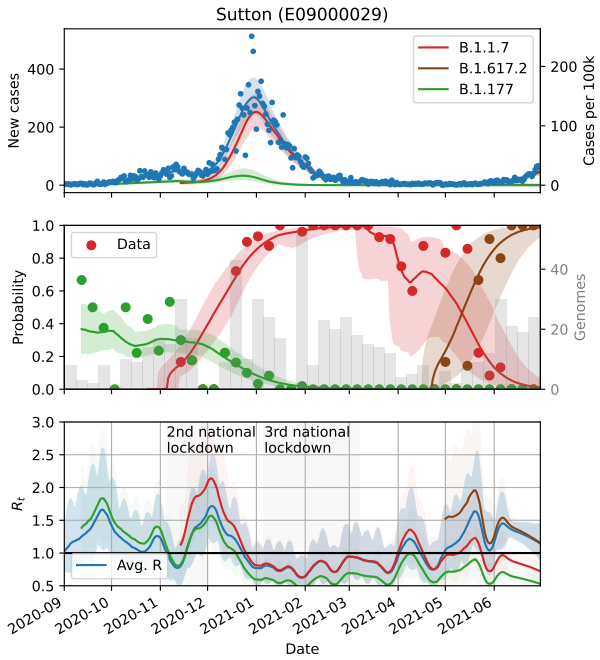


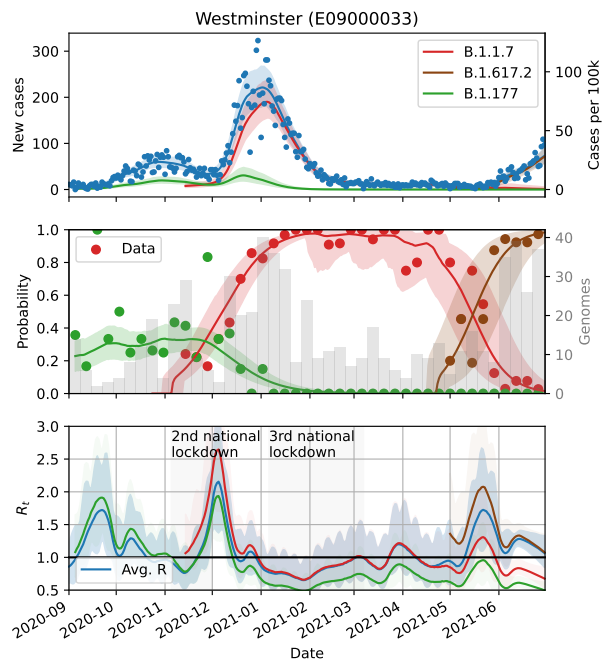












3 Supplementary Note 3

Supplementary Note 3 Tab. 1: Lower Tier Local Authorities (LTLA) lookup codes and names.

	LTLA look up code	LTLA name
0	E06000001	Hartlepool
1	E06000002	Middlesbrough
2	E06000003	Redcar and Cleveland
3	E06000004	Stockton-on-Tees
4	E06000005	Darlington
5	E06000006	Halton
6	E06000007	Warrington
7	E06000008	Blackburn with Darwen
8	E06000009	Blackpool
9	E06000010	Kingston upon Hull, City of
10	E06000011	East Riding of Yorkshire
11	E06000012	North East Lincolnshire
12	E06000013	North Lincolnshire
13	E06000014	York
14	E06000015	Derby
15	E06000016	Leicester
16	E06000017	Rutland
17	E06000018	Nottingham
18	E06000019	Herefordshire, County of
19	E06000020	Telford and Wrekin
20	E06000021	Stoke-on-Trent
21	E06000022	Bath and North East Somerset
22	E06000023	Bristol, City of
23	E06000024	North Somerset
24	E06000025	South Gloucestershire
25	E06000026	Plymouth
26	E06000027	Torbay
27	E06000030	Swindon
28	E06000031	Peterborough
29	E06000032	Luton
30	E06000033	Southend-on-Sea

Continued on next page

	LTLA look up code	LTLA name
31	E06000034	Thurrock
32	E06000035	Medway
33	E06000036	Bracknell Forest
34	E06000037	West Berkshire
35	E06000038	Reading
36	E06000039	Slough
37	E06000040	Windsor and Maidenhead
38	E06000041	Wokingham
39	E06000042	Milton Keynes
40	E06000043	Brighton and Hove
41	E06000044	Portsmouth
42	E06000045	Southampton
43	E06000046	Isle of Wight
44	E06000047	County Durham
45	E06000049	Cheshire East
46	E06000050	Cheshire West and Chester
47	E06000051	Shropshire
48	E06000052	Cornwall
49	E06000053	Isles of Scilly
50	E06000054	Wiltshire
51	E06000055	Bedford
52	E06000056	Central Bedfordshire
53	E06000057	Northumberland
54	E06000058	Bournemouth, Christchurch and Poole
55	E06000059	Dorset
56	E07000004	Aylesbury Vale
57	E07000005	Chiltern
58	E07000006	South Bucks
59	E07000007	Wycombe
60	E07000008	Cambridge
61	E07000009	East Cambridgeshire
62	E07000010	Fenland
63	E07000011	Huntingdonshire
64	E07000012	South Cambridgeshire
65	E07000026	Allerdale

Continued on next page

	LTLA look up code	LTLA name
66	E07000027	Barrow-in-Furness
67	E07000028	Carlisle
68	E07000029	Copeland
69	E07000030	Eden
70	E07000031	South Lakeland
71	E07000032	Amber Valley
72	E07000033	Bolsover
73	E07000034	Chesterfield
74	E07000035	Derbyshire Dales
75	E07000036	Erewash
76	E07000037	High Peak
77	E07000038	North East Derbyshire
78	E07000039	South Derbyshire
79	E07000040	East Devon
80	E07000041	Exeter
81	E07000042	Mid Devon
82	E07000043	North Devon
83	E07000044	South Hams
84	E07000045	Teignbridge
85	E07000046	Torridge
86	E07000047	West Devon
87	E07000061	Eastbourne
88	E07000062	Hastings
89	E07000063	Lewes
90	E07000064	Rother
91	E07000065	Wealden
92	E07000066	Basildon
93	E07000067	Braintree
94	E07000068	Brentwood
95	E07000069	Castle Point
96	E07000070	Chelmsford
97	E07000071	Colchester
98	E07000072	Epping Forest
99	E07000073	Harlow
100	E07000074	Maldon

Continued on next page

	LTLA look up code	LTLA name
101	E07000075	Rochford
102	E07000076	Tendring
103	E07000077	Uttlesford
104	E07000078	Cheltenham
105	E07000079	Cotswold
106	E07000080	Forest of Dean
107	E07000081	Gloucester
108	E07000082	Stroud
109	E07000083	Tewkesbury
110	E07000084	Basingstoke and Deane
111	E07000085	East Hampshire
112	E07000086	Eastleigh
113	E07000087	Fareham
114	E07000088	Gosport
115	E07000089	Hart
116	E07000090	Havant
117	E07000091	New Forest
118	E07000092	Rushmoor
119	E07000093	Test Valley
120	E07000094	Winchester
121	E07000095	Broxbourne
122	E07000096	Dacorum
123	E07000098	Hertsmere
124	E07000099	North Hertfordshire
125	E07000102	Three Rivers
126	E07000103	Watford
127	E07000105	Ashford
128	E07000106	Canterbury
129	E07000107	Dartford
130	E07000108	Dover
131	E07000109	Gravesham
132	E07000110	Maidstone
133	E07000111	Sevenoaks
134	E07000112	Folkestone and Hythe
135	E07000113	Swale

Continued on next page

	LTLA look up code	LTLA name
136	E07000114	Thanet
137	E07000115	Tonbridge and Malling
138	E07000116	Tunbridge Wells
139	E07000117	Burnley
140	E07000118	Chorley
141	E07000119	Fylde
142	E07000120	Hyndburn
143	E07000121	Lancaster
144	E07000122	Pendle
145	E07000123	Preston
146	E07000124	Ribble Valley
147	E07000125	Rossendale
148	E07000126	South Ribble
149	E07000127	West Lancashire
150	E07000128	Wyre
151	E07000129	Blaby
152	E07000130	Charnwood
153	E07000131	Harborough
154	E07000132	Hinckley and Bosworth
155	E07000133	Melton
156	E07000134	North West Leicestershire
157	E07000135	Oadby and Wigston
158	E07000136	Boston
159	E07000137	East Lindsey
160	E07000138	Lincoln
161	E07000139	North Kesteven
162	E07000140	South Holland
163	E07000141	South Kesteven
164	E07000142	West Lindsey
165	E07000143	Breckland
166	E07000144	Broadland
167	E07000145	Great Yarmouth
168	E07000146	King's Lynn and West Norfolk
169	E07000147	North Norfolk
170	E07000148	Norwich

Continued on next page

	LTLA look up code	LTLA name
171	E07000149	South Norfolk
172	E07000150	Corby
173	E07000151	Daventry
174	E07000152	East Northamptonshire
175	E07000153	Kettering
176	E07000154	Northampton
177	E07000155	South Northamptonshire
178	E07000156	Wellingborough
179	E07000163	Craven
180	E07000164	Hambleton
181	E07000165	Harrogate
182	E07000166	Richmondshire
183	E07000167	Ryedale
184	E07000168	Scarborough
185	E07000169	Selby
186	E07000170	Ashfield
187	E07000171	Bassetlaw
188	E07000172	Broxtowe
189	E07000173	Gedling
190	E07000174	Mansfield
191	E07000175	Newark and Sherwood
192	E07000176	Rushcliffe
193	E07000177	Cherwell
194	E07000178	Oxford
195	E07000179	South Oxfordshire
196	E07000180	Vale of White Horse
197	E07000181	West Oxfordshire
198	E07000187	Mendip
199	E07000188	Sedgemoor
200	E07000189	South Somerset
201	E07000192	Cannock Chase
202	E07000193	East Staffordshire
203	E07000194	Lichfield
204	E07000195	Newcastle-under-Lyme
205	E07000196	South Staffordshire

Continued on next page

	LTLA look up code	LTLA name
206	E07000197	Stafford
207	E07000198	Staffordshire Moorlands
208	E07000199	Tamworth
209	E07000200	Babergh
210	E07000202	Ipswich
211	E07000203	Mid Suffolk
212	E07000207	Elmbridge
213	E07000208	Epsom and Ewell
214	E07000209	Guildford
215	E07000210	Mole Valley
216	E07000211	Reigate and Banstead
217	E07000212	Runnymede
218	E07000213	Spelthorne
219	E07000214	Surrey Heath
220	E07000215	Tandridge
221	E07000216	Waverley
222	E07000217	Woking
223	E07000218	North Warwickshire
224	E07000219	Nuneaton and Bedworth
225	E07000220	Rugby
226	E07000221	Stratford-on-Avon
227	E07000222	Warwick
228	E07000223	Adur
229	E07000224	Arun
230	E07000225	Chichester
231	E07000226	Crawley
232	E07000227	Horsham
233	E07000228	Mid Sussex
234	E07000229	Worthing
235	E07000234	Bromsgrove
236	E07000235	Malvern Hills
237	E07000236	Redditch
238	E07000237	Worcester
239	E07000238	Wychavon
240	E07000239	Wyre Forest

Continued on next page

	LTLA look up code	LTLA name
241	E07000240	St Albans
242	E07000241	Welwyn Hatfield
243	E07000242	East Hertfordshire
244	E07000243	Stevenage
245	E07000244	East Suffolk
246	E07000245	West Suffolk
247	E07000246	Somerset West and Taunton
248	E08000001	Bolton
249	E08000002	Bury
250	E08000003	Manchester
251	E08000004	Oldham
252	E08000005	Rochdale
253	E08000006	Salford
254	E08000007	Stockport
255	E08000008	Tameside
256	E08000009	Trafford
257	E08000010	Wigan
258	E08000011	Knowsley
259	E08000012	Liverpool
260	E08000013	St. Helens
261	E08000014	Sefton
262	E08000015	Wirral
263	E08000016	Barnsley
264	E08000017	Doncaster
265	E08000018	Rotherham
266	E08000019	Sheffield
267	E08000021	Newcastle upon Tyne
268	E08000022	North Tyneside
269	E08000023	South Tyneside
270	E08000024	Sunderland
271	E08000025	Birmingham
272	E08000026	Coventry
273	E08000027	Dudley
274	E08000028	Sandwell
275	E08000029	Solihull

Continued on next page

	LTLA look up code	LTLA name
276	E08000030	Walsall
277	E08000031	Wolverhampton
278	E08000032	Bradford
279	E08000033	Calderdale
280	E08000034	Kirklees
281	E08000035	Leeds
282	E08000036	Wakefield
283	E08000037	Gateshead
284	E09000001	City of London
285	E09000002	Barking and Dagenham
286	E09000003	Barnet
287	E09000004	Bexley
288	E09000005	Brent
289	E09000006	Bromley
290	E09000007	Camden
291	E09000008	Croydon
292	E09000009	Ealing
293	E09000010	Enfield
294	E09000011	Greenwich
295	E09000012	Hackney
296	E09000013	Hammersmith and Fulham
297	E09000014	Haringey
298	E09000015	Harrow
299	E09000016	Havering
300	E09000017	Hillingdon
301	E09000018	Hounslow
302	E09000019	Islington
303	E09000020	Kensington and Chelsea
304	E09000021	Kingston upon Thames
305	E09000022	Lambeth
306	E09000023	Lewisham
307	E09000024	Merton
308	E09000025	Newham
309	E09000026	Redbridge
310	E09000027	Richmond upon Thames

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	LTLA look up code	LTLA name
311	E09000028	Southwark
312	E09000029	Sutton
313	E09000030	Tower Hamlets
314	E09000031	Waltham Forest
315	E09000032	Wandsworth
316	E09000033	Westminster
