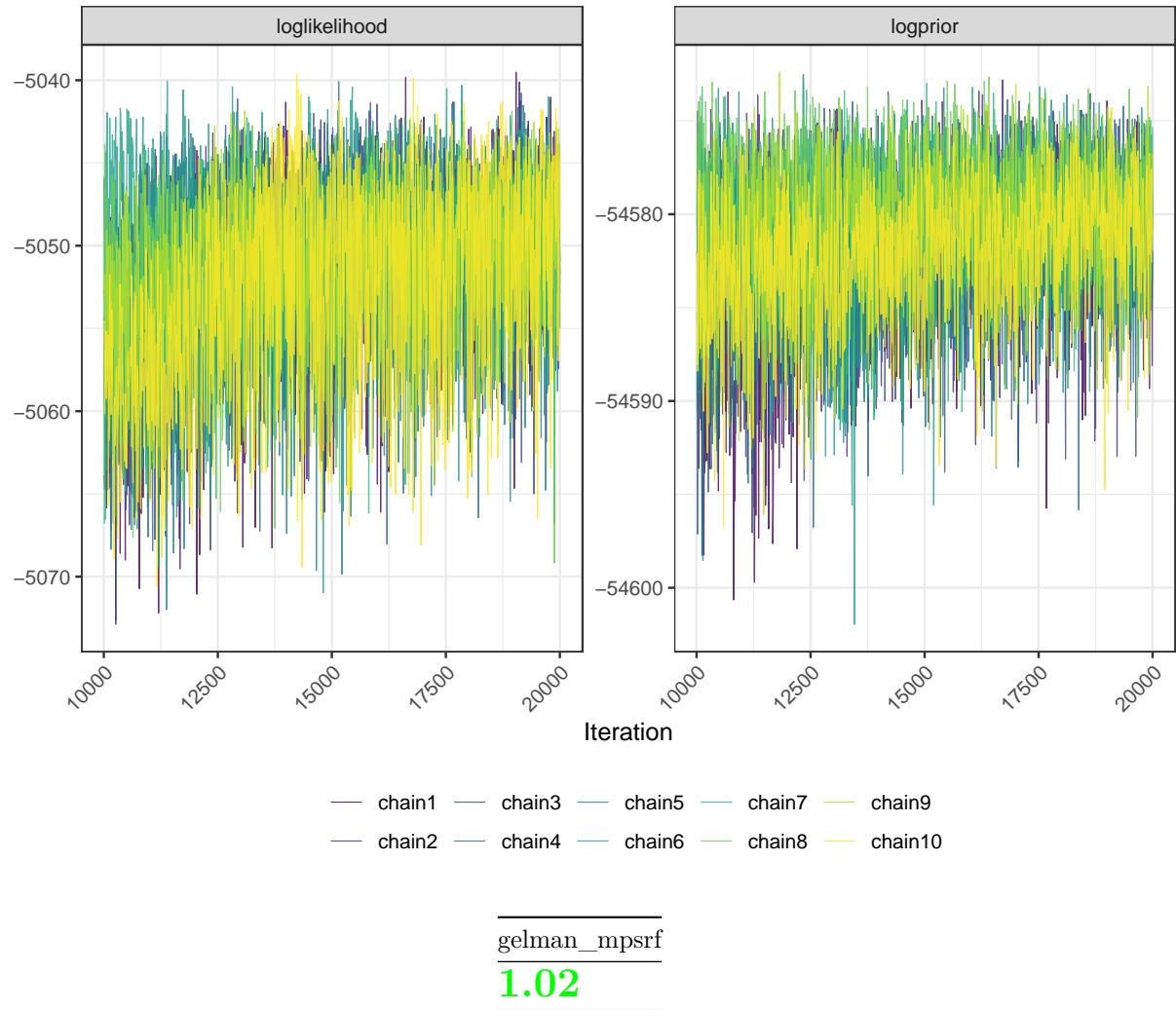


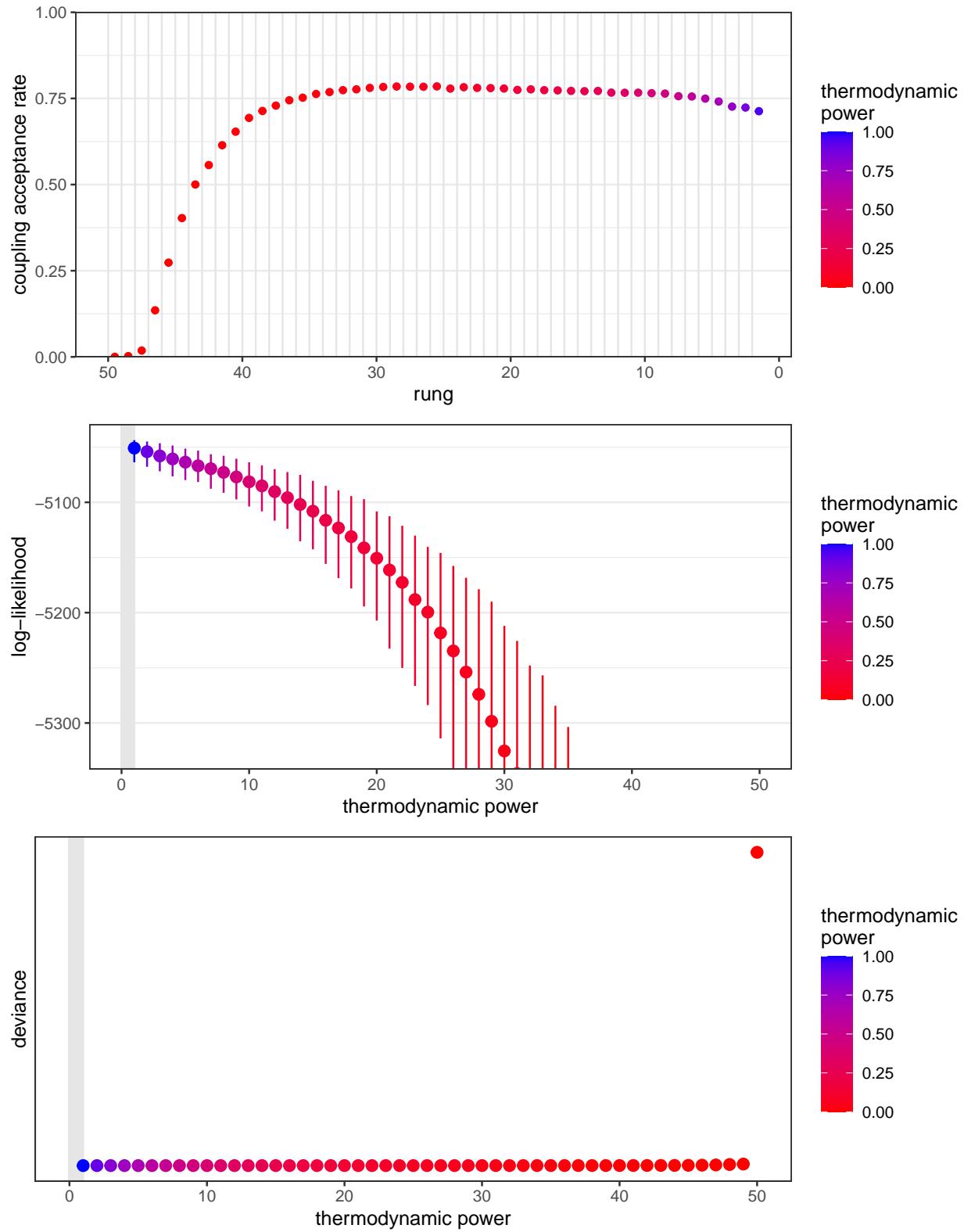
BRA1 with the Potential for Seroreversion Included

Fit Diagnostics

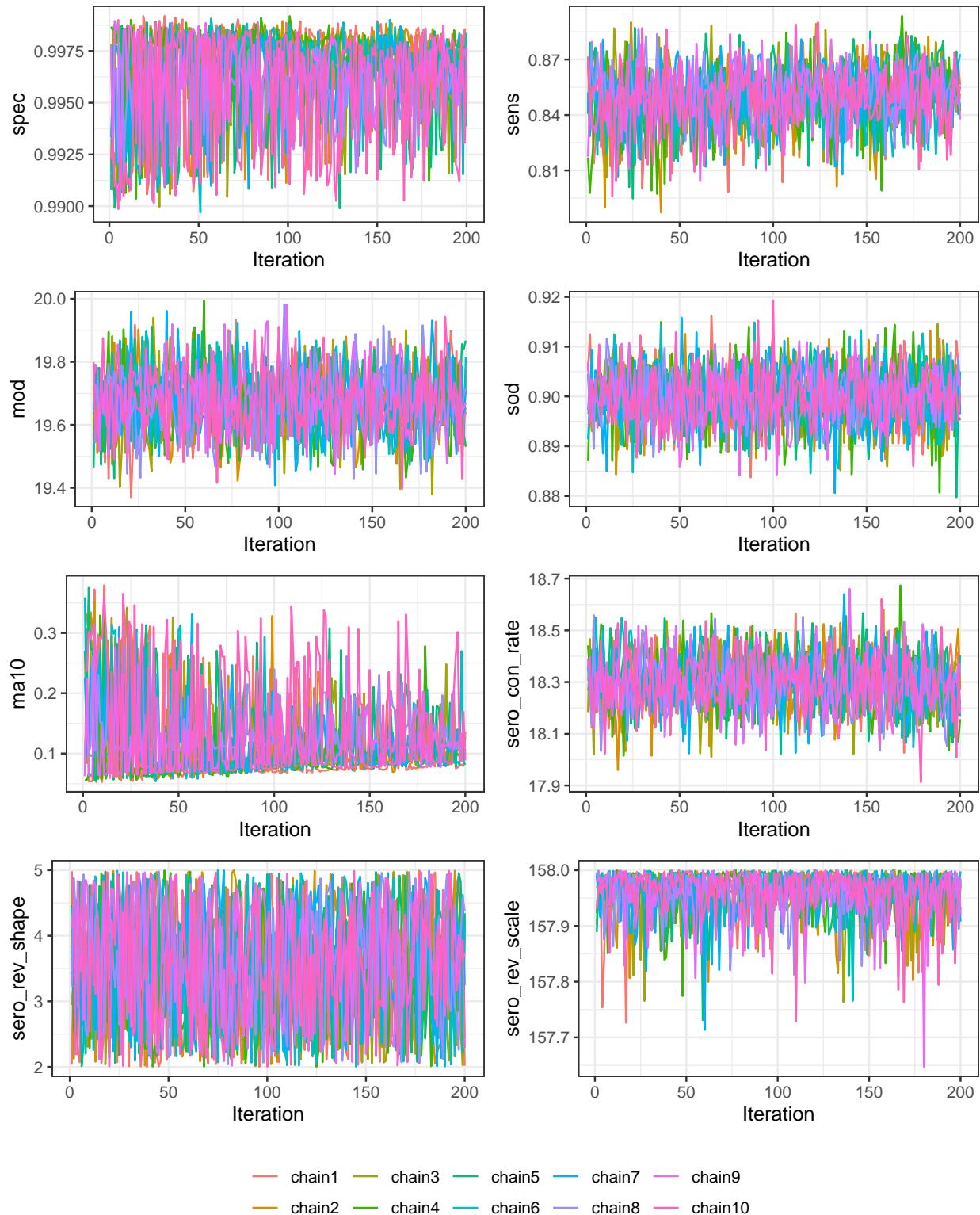
Log Likelihood & Prior Plot



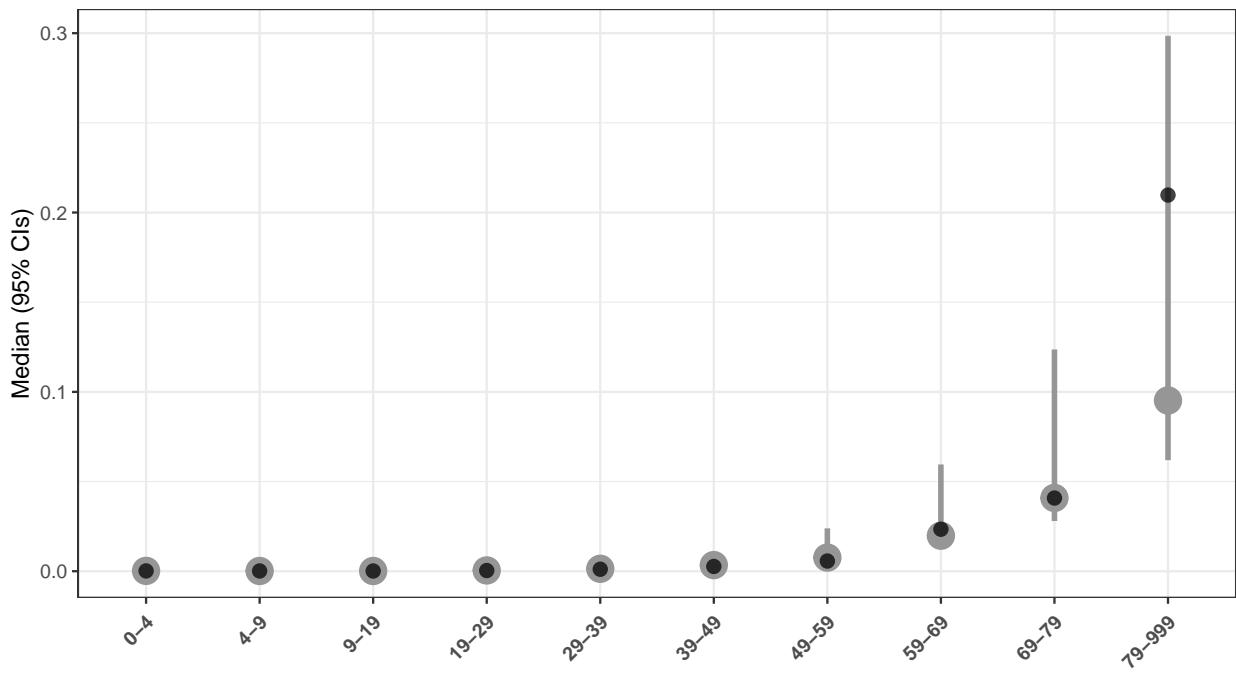
Metropolis Coupling Acceptance Plot



Serological Diagnostics

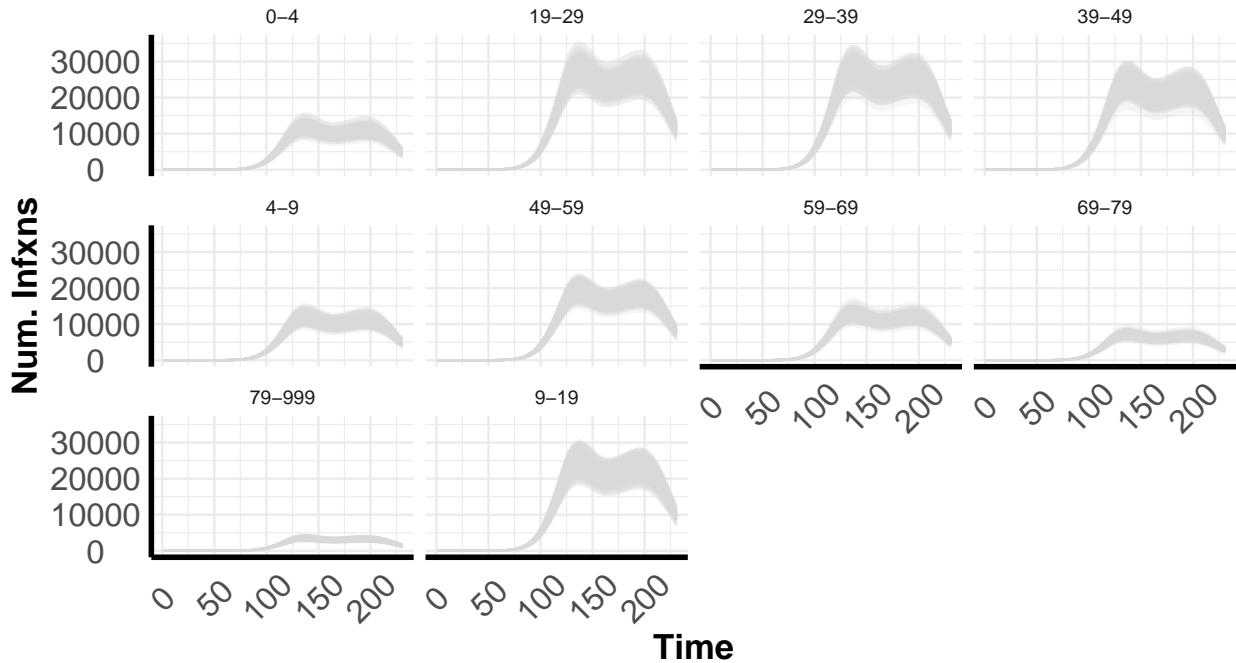


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



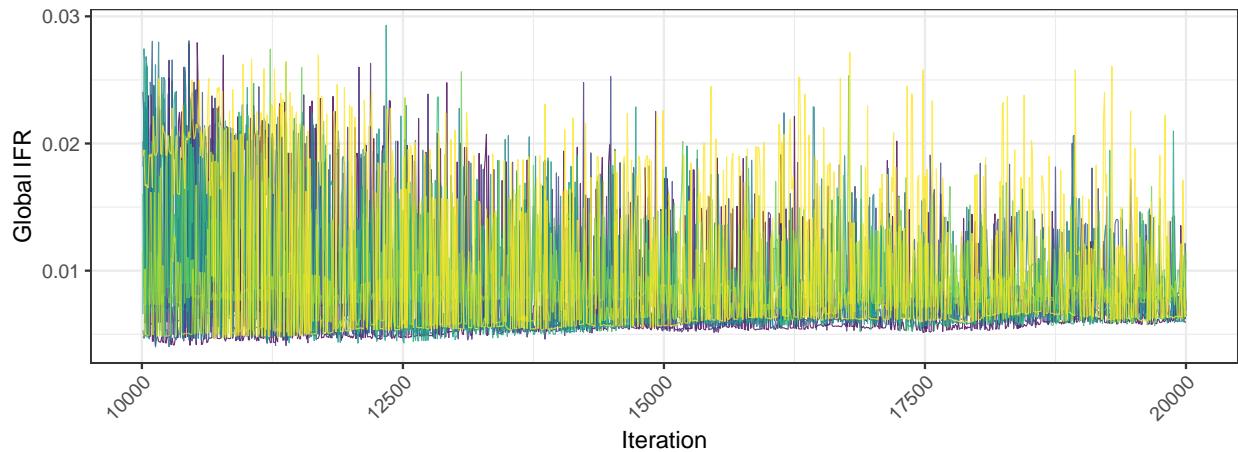
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-4	ma1	0.0001	0.0001	0.0002	0.0002	0.0006	0.0009	330.9828	-2.8179	0.0075
4-9	ma2	0.0001	0.0001	0.0001	0.0002	0.0004	0.0006	347.7440	-2.8551	0.0068
9-19	ma3	0.0001	0.0001	0.0001	0.0002	0.0004	0.0006	322.0141	-2.8580	0.0067
19-29	ma4	0.0002	0.0003	0.0004	0.0005	0.0013	0.0019	326.2076	-2.6356	0.0124
29-39	ma5	0.0008	0.0010	0.0014	0.0017	0.0042	0.0062	325.7660	-2.6691	0.0113
39-49	ma6	0.0020	0.0024	0.0034	0.0043	0.0106	0.0162	319.6660	-2.5949	0.0138
49-59	ma7	0.0042	0.0054	0.0076	0.0096	0.0239	0.0329	315.0830	-2.8130	0.0076
59-69	ma8	0.0113	0.0138	0.0198	0.0245	0.0595	0.0843	322.7400	-2.8116	0.0077
69-79	ma9	0.0229	0.0280	0.0409	0.0510	0.1237	0.1702	319.6673	-2.9448	0.0052
79-999	ma10	0.0492	0.0619	0.0952	0.1194	0.2985	0.3921	301.5248	-3.4501	0.0010

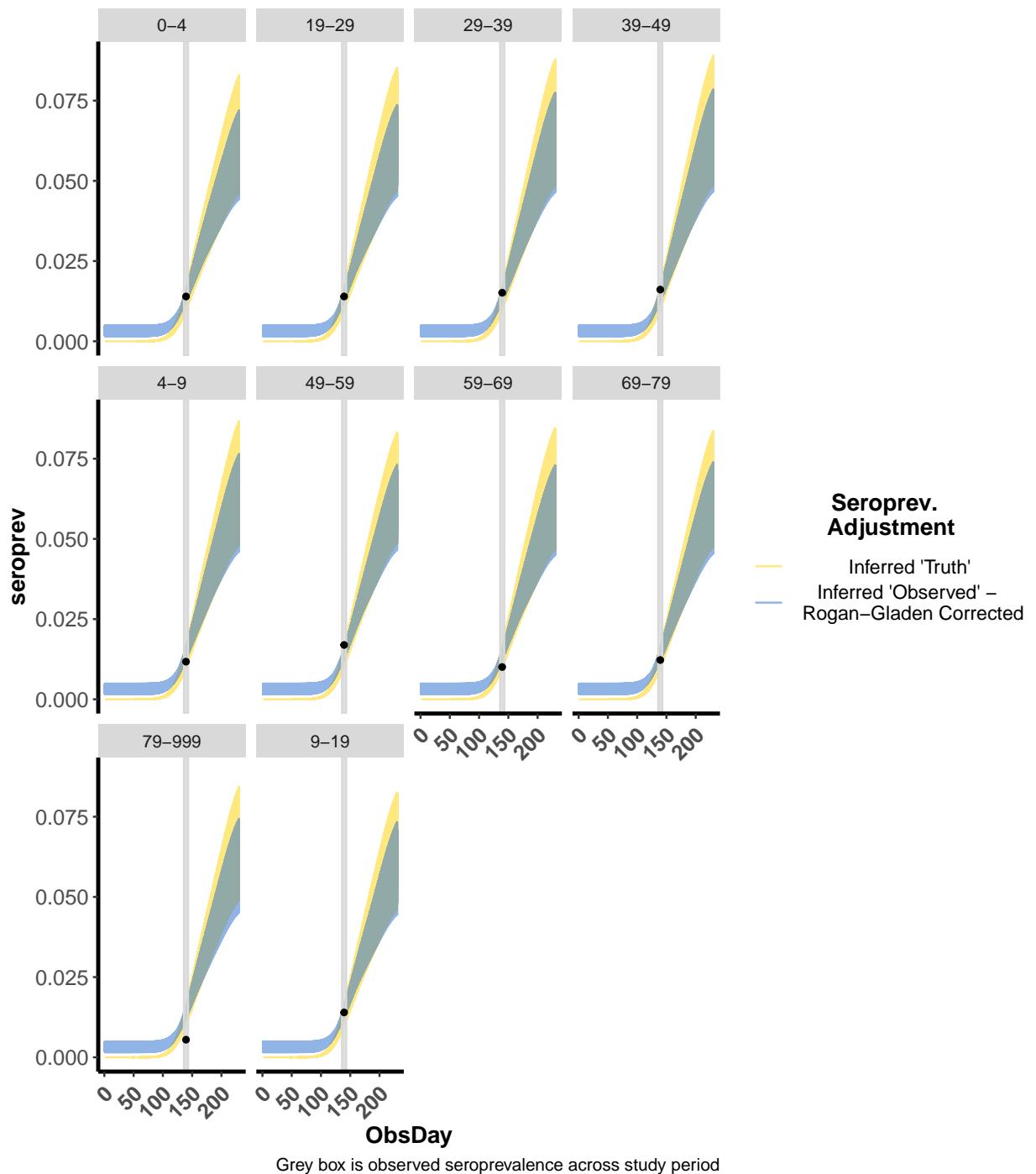
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.004	0.0049	0.0068	0.0086	0.021	0.029	557.5594	16.6241	0

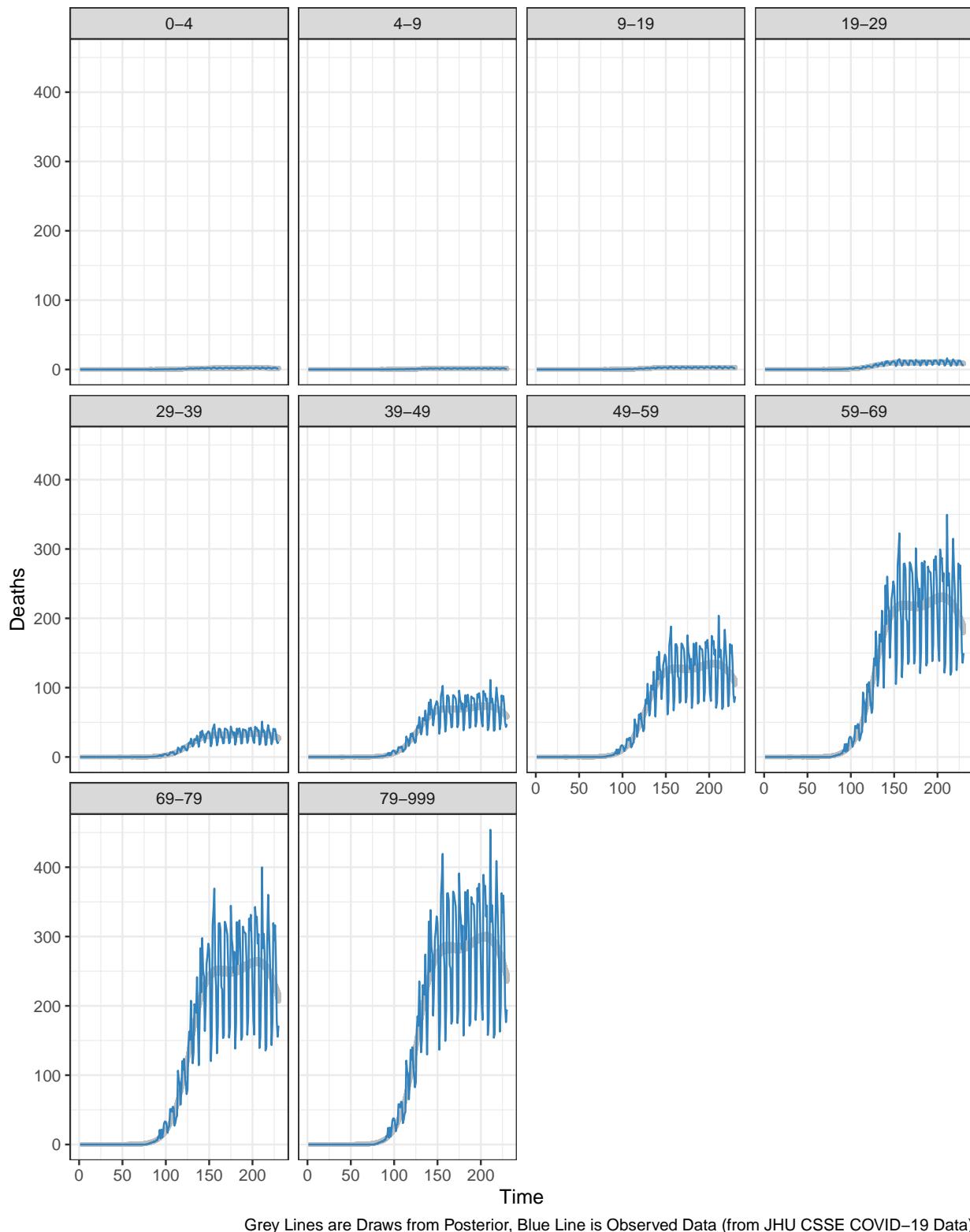
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0043	0.0046	0.0056	0.0078	0.0216	0.0275	540.0060	3.1968	0.0024
chain2	0.0041	0.0049	0.0065	0.0078	0.0218	0.0273	27.8634	7.6051	0.0000
chain3	0.0044	0.0050	0.0065	0.0080	0.0188	0.0254	79.9254	5.0602	0.0000
chain4	0.0040	0.0049	0.0063	0.0074	0.0173	0.0278	89.0618	4.5936	0.0000
chain5	0.0046	0.0049	0.0079	0.0097	0.0214	0.0277	97.9117	4.3296	0.0000
chain6	0.0044	0.0048	0.0061	0.0074	0.0208	0.0290	60.9554	4.2932	0.0000
chain7	0.0049	0.0053	0.0083	0.0091	0.0195	0.0250	36.8166	7.7803	0.0000
chain8	0.0067	0.0070	0.0082	0.0094	0.0166	0.0284	1000.0000	-0.0255	0.3988
chain9	0.0049	0.0051	0.0074	0.0083	0.0162	0.0263	900.4247	-0.2305	0.3885
chain10	0.0046	0.0050	0.0064	0.0110	0.0238	0.0281	69.3764	4.1794	0.0001



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



Grey Lines are Draws from Posterior, Blue Line is Observed Data (from JHU CSSE COVID-19 Data)

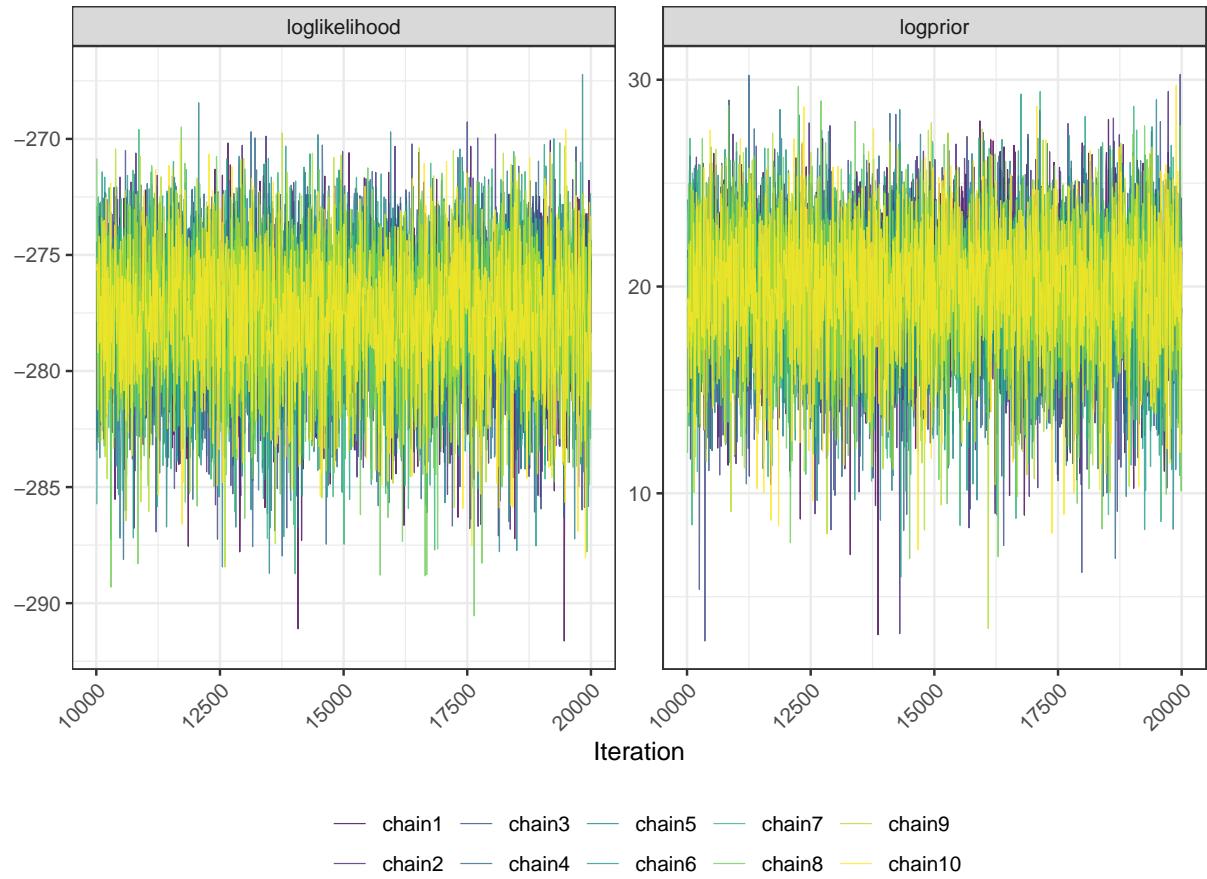
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.0415	1.0680	18.2002	19.6591	42.1370	64.5557	30.1701	-0.3796	0.3712
x2	124.5585	125.5352	126.9861	127.5336	132.5789	140.1884	220.0964	2.2213	0.0338
x3	144.2096	151.9524	157.8805	157.7522	162.8104	167.3207	695.0108	0.2177	0.3896
x4	175.5211	177.3686	179.5960	179.5785	181.7247	184.0338	887.6271	0.6524	0.3225
y1	0.0000	0.0026	0.0800	0.1164	0.4447	1.0252	682.5194	0.1180	0.3962
y2	0.0076	0.0108	1.4769	1.7319	4.2631	7.0512	32.1417	-0.0518	0.3984
y3	10.5025	10.8398	11.9572	11.8360	12.3268	12.4944	312.4586	5.7504	0.0000
y4	10.4305	10.7802	11.8996	11.7661	12.2427	12.4163	312.6544	5.5705	0.0000
y5	10.4796	10.8151	11.9389	11.8008	12.2728	12.4750	304.1226	5.4897	0.0000
Ne1	0.7420	0.9040	1.0006	1.0006	1.0980	1.1749	7352.6535	-2.4838	0.0182
Ne10	0.7762	0.8773	0.9906	0.9927	1.1113	1.2263	187.2569	7.2540	0.0000
Ne2	0.7847	0.8976	0.9975	0.9971	1.0963	1.1622	7639.9228	-0.5101	0.3503
Ne3	0.8202	0.9053	1.0019	1.0017	1.0981	1.1913	4954.7489	-0.3373	0.3769
Ne4	0.8124	0.9020	1.0003	0.9995	1.0948	1.2165	3089.1027	-2.6704	0.0113
Ne5	0.8203	0.9086	1.0075	1.0068	1.1023	1.1765	2480.5610	-2.3100	0.0277
Ne6	0.8163	0.9180	1.0149	1.0146	1.1069	1.2057	1569.6312	-3.6600	0.0005
Ne7	0.8500	0.9247	1.0180	1.0186	1.1148	1.2025	1215.0761	0.8341	0.2817
Ne8	0.7903	0.8756	0.9757	0.9754	1.0738	1.1670	550.4644	-0.6051	0.3322
Ne9	0.8263	0.8989	0.9944	0.9950	1.0889	1.1773	547.2525	0.6277	0.3276

CHE1 with the Potential for Seroreversion Included

Fit Diagnostics

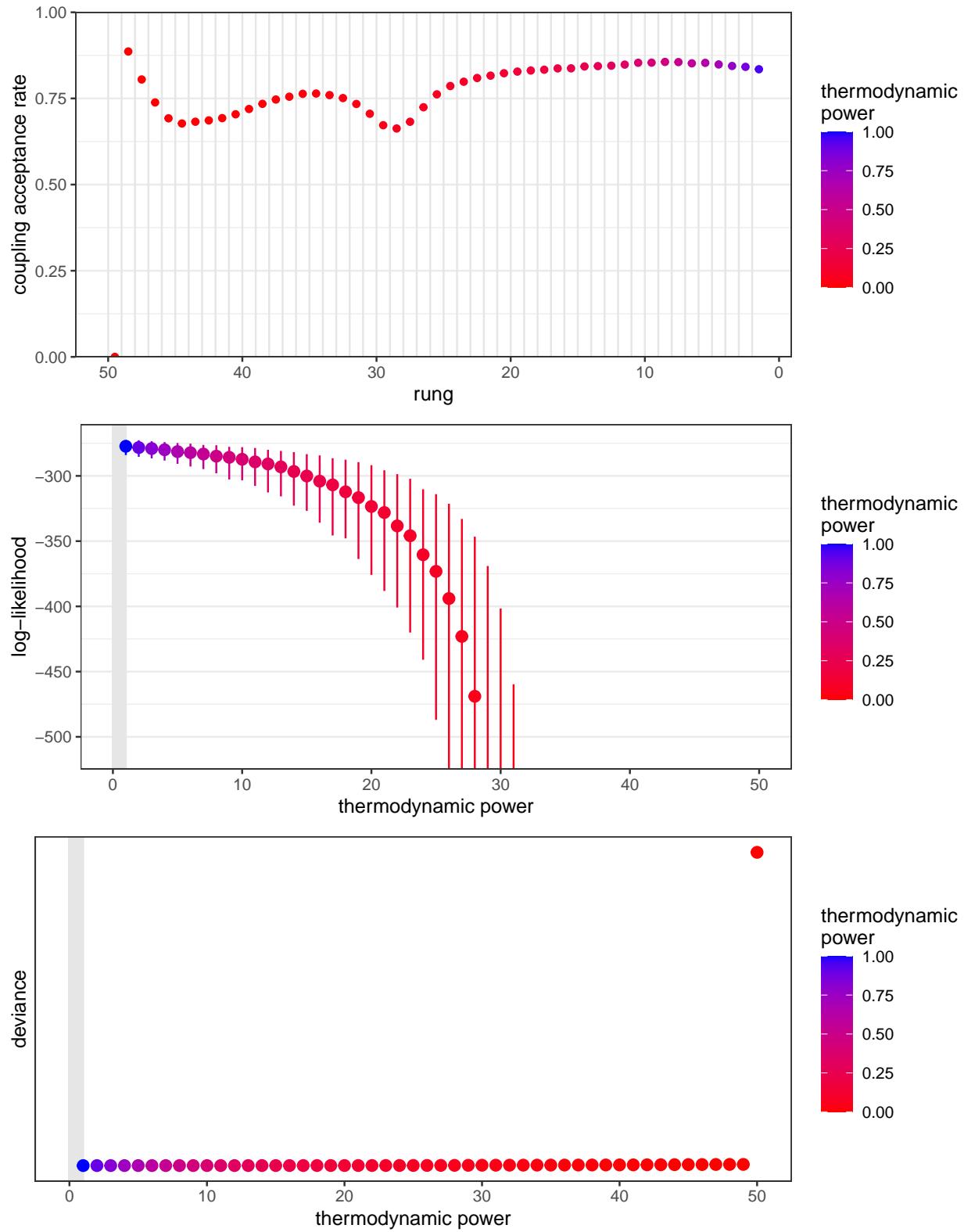
Log Likelihood & Prior Plot



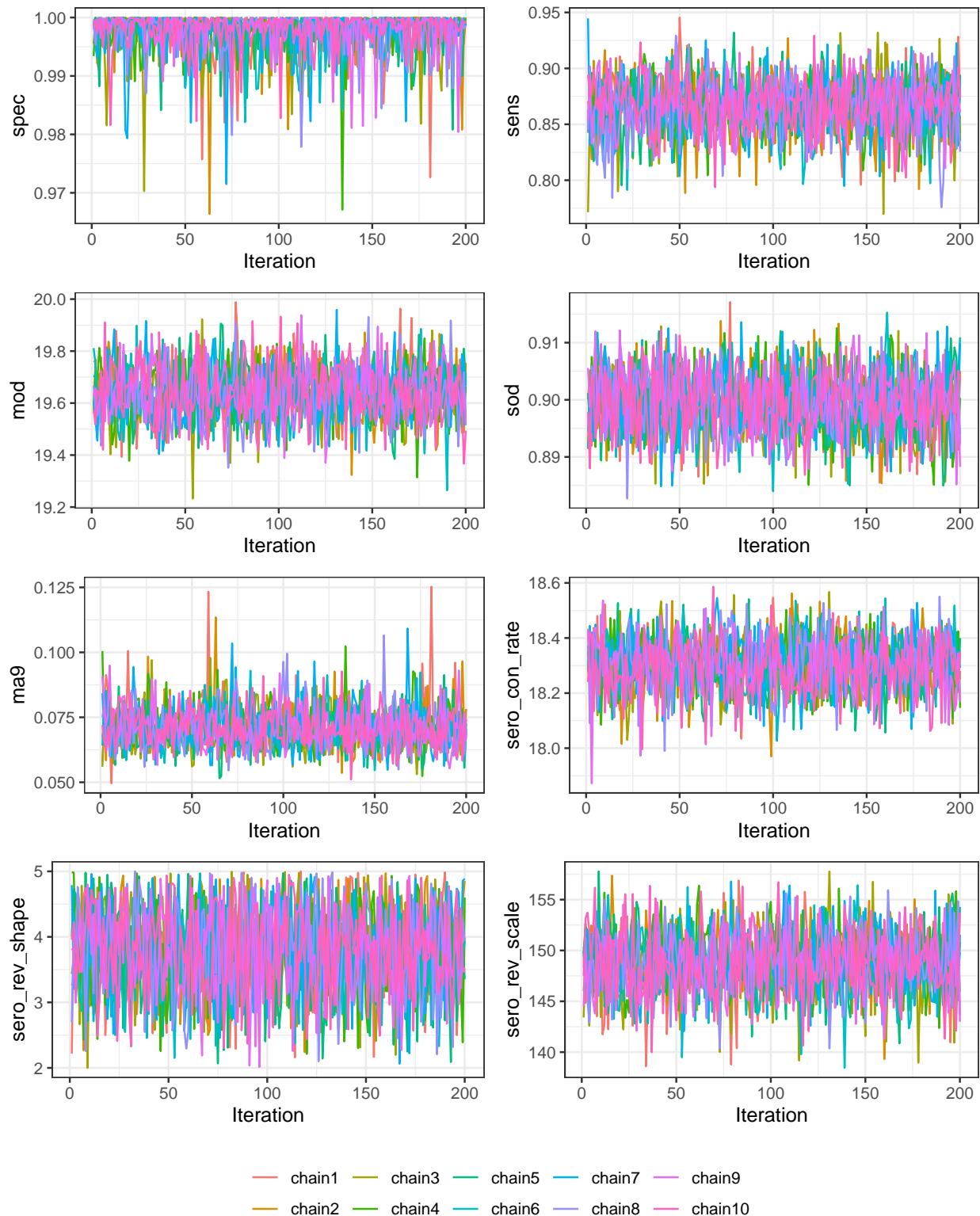
gelman_mpsrf

1

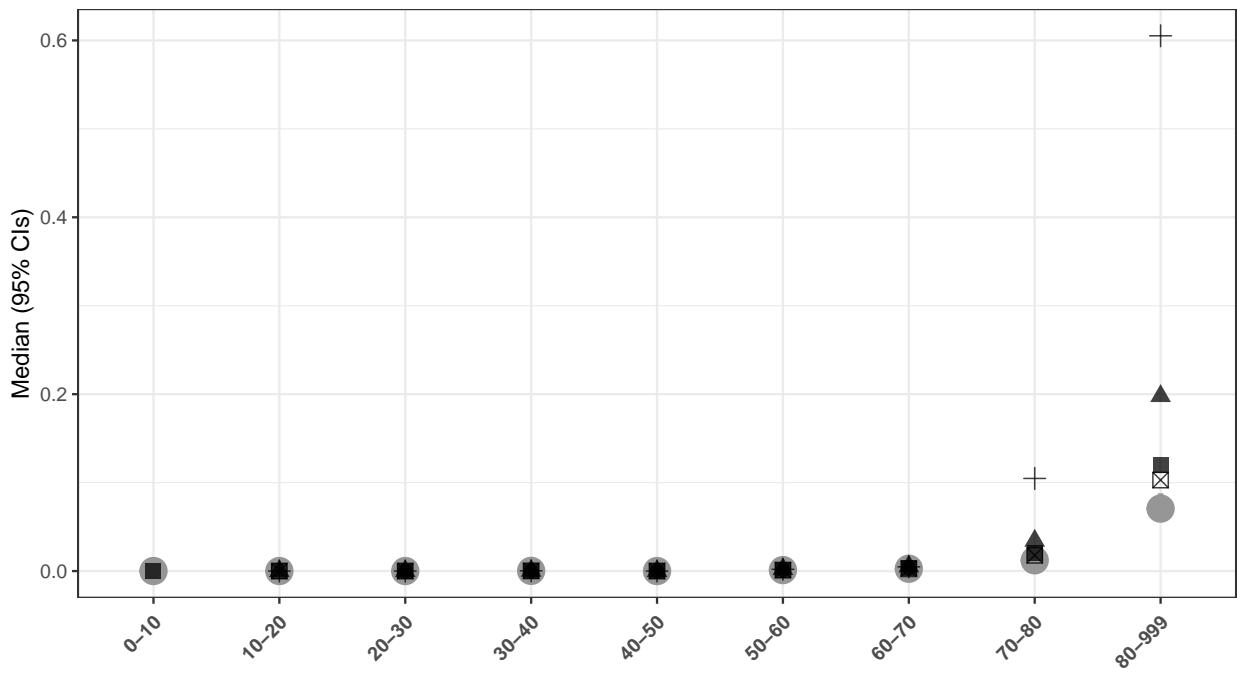
Metropolis Coupling Acceptance Plot



Serological Diagnostics

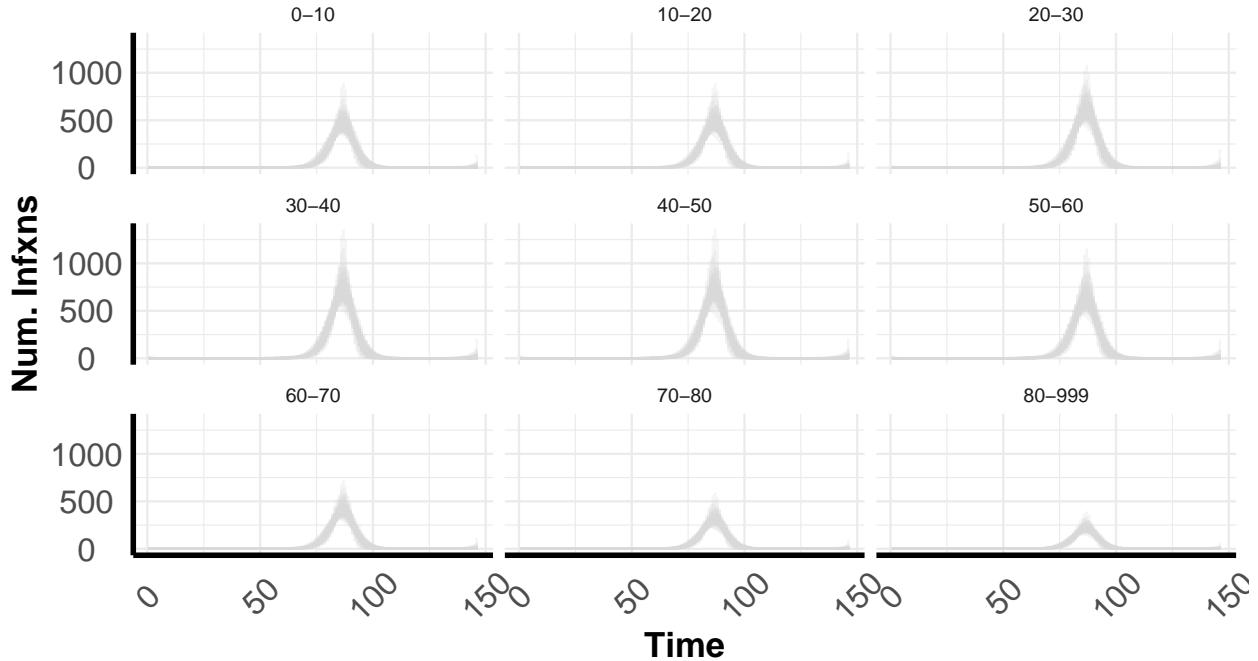


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



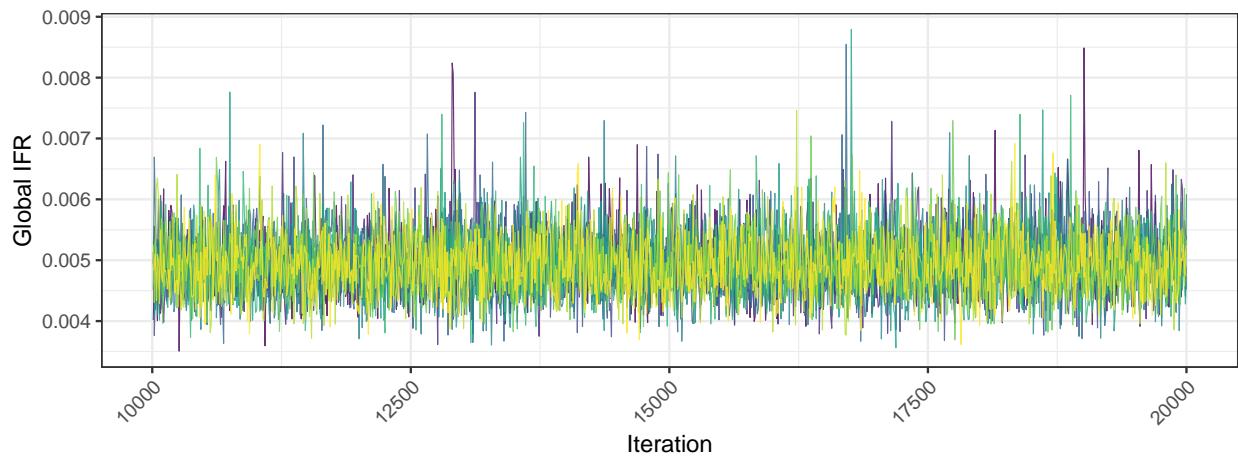
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-10	ma1	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	8921.372	1.2548	0.1816
10-20	ma2	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	9643.571	0.9089	0.2640
20-30	ma3	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	9140.397	0.1039	0.3968
30-40	ma4	0.0000	0.0000	0.0002	0.0002	0.0006	0.0010	10000.000	0.0464	0.3985
40-50	ma5	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	8363.284	0.5701	0.3391
50-60	ma6	0.0001	0.0004	0.0011	0.0011	0.0019	0.0037	12659.193	0.3118	0.3800
60-70	ma7	0.0003	0.0014	0.0026	0.0027	0.0043	0.0066	10000.000	-0.0845	0.3975
70-80	ma8	0.0065	0.0089	0.0122	0.0123	0.0162	0.0221	9341.604	1.8812	0.0680
80-999	ma9	0.0486	0.0577	0.0706	0.0712	0.0879	0.1252	8211.876	2.9355	0.0054

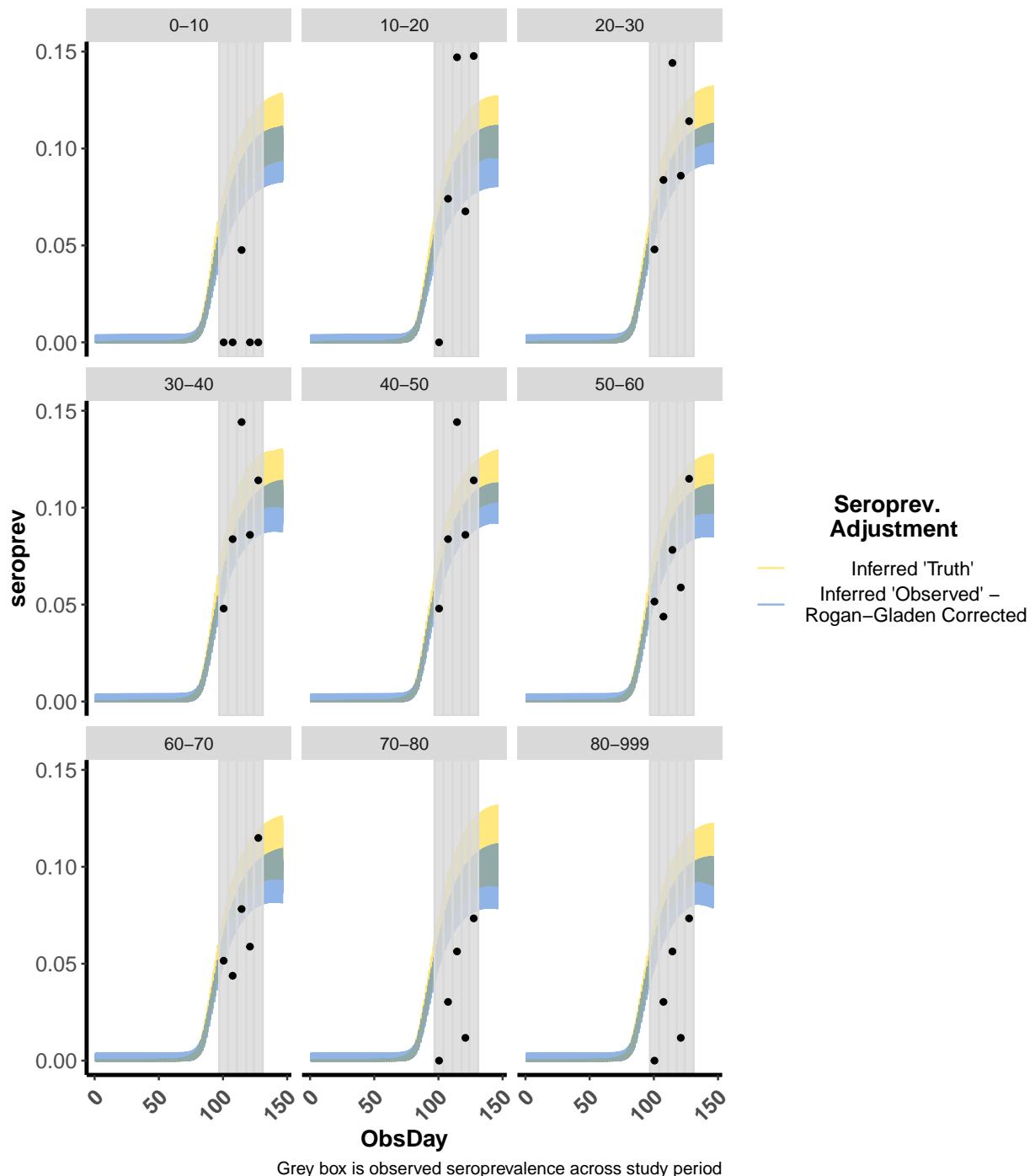
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0034	0.004	0.0047	0.0047	0.0057	0.0087	9621.193	-1.3179	0.1674

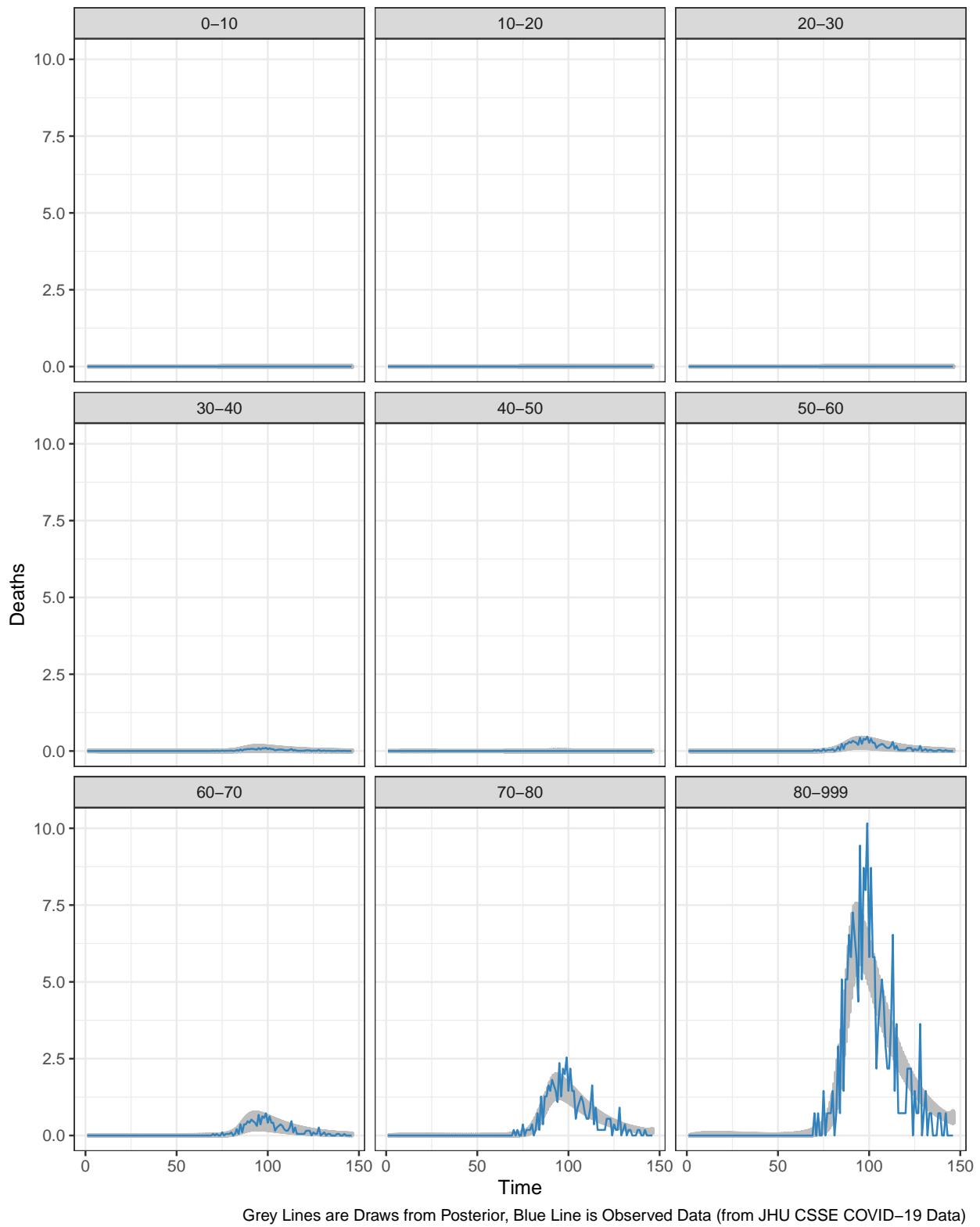
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0036	0.0040	0.0047	0.0048	0.0058	0.0080	799.5085	-2.1887	0.0364
chain2	0.0035	0.0040	0.0047	0.0047	0.0057	0.0078	858.2574	-1.2943	0.1726
chain3	0.0037	0.0039	0.0046	0.0047	0.0056	0.0070	1000.0000	0.5235	0.3479
chain4	0.0035	0.0039	0.0047	0.0047	0.0056	0.0075	902.6270	1.0442	0.2313
chain5	0.0035	0.0039	0.0047	0.0047	0.0056	0.0070	886.2965	0.8524	0.2774
chain6	0.0036	0.0040	0.0047	0.0047	0.0057	0.0087	841.5273	-2.5310	0.0162
chain7	0.0036	0.0039	0.0046	0.0047	0.0057	0.0074	758.2127	-0.1847	0.3922
chain8	0.0036	0.0040	0.0047	0.0047	0.0057	0.0069	858.1182	0.3113	0.3801
chain9	0.0035	0.0039	0.0047	0.0047	0.0056	0.0069	1020.0349	0.5599	0.3411
chain10	0.0034	0.0040	0.0047	0.0047	0.0056	0.0068	745.8912	-0.6612	0.3206



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



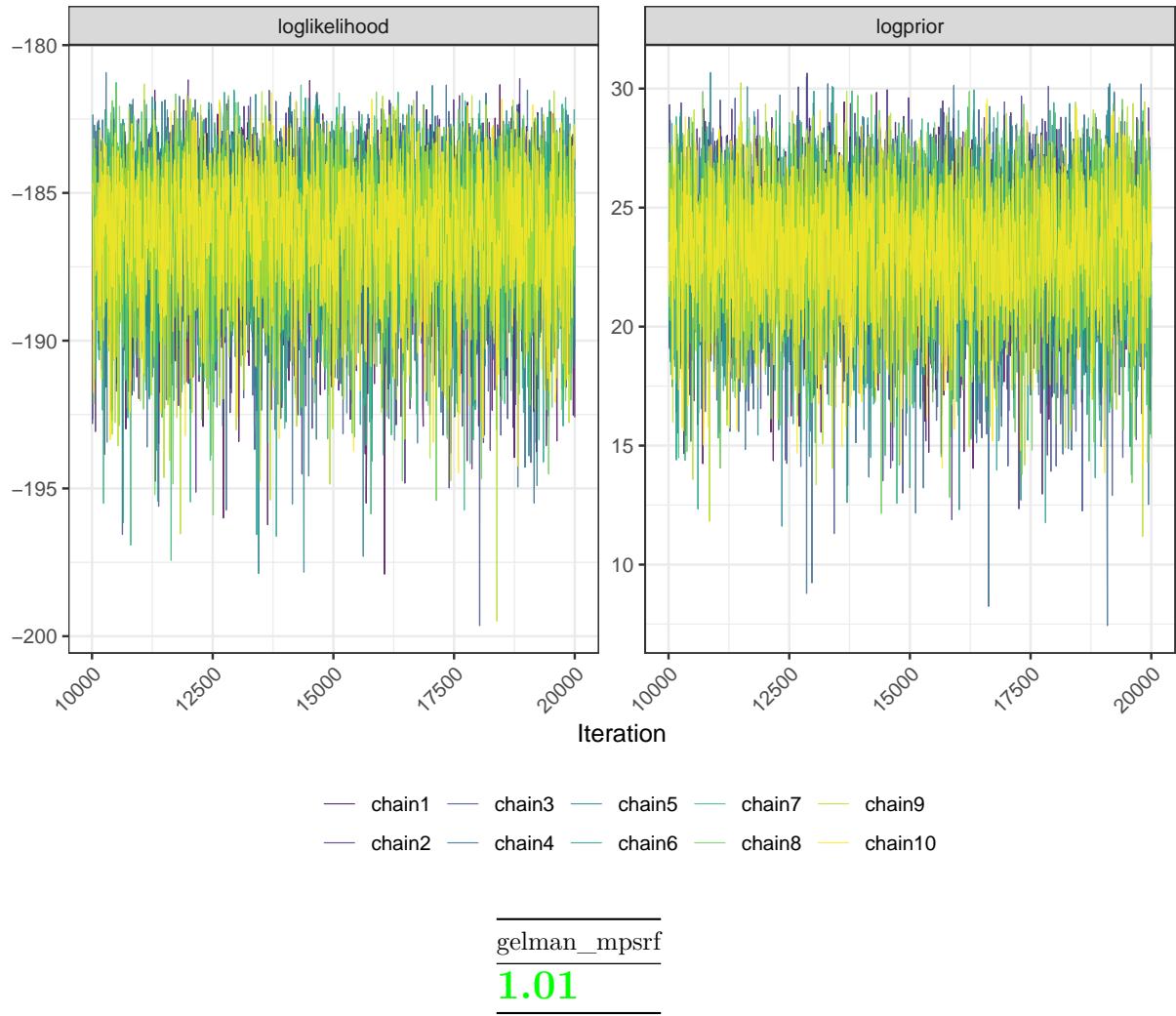
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.2849	7.0361	64.4633	63.8577	80.8179	86.7252	1164.248	0.1806	0.3925
x2	67.8213	78.5498	90.4105	90.2259	99.7047	107.3701	1475.957	0.0103	0.3989
x3	89.5429	96.4124	107.5151	109.6539	140.1135	145.4983	3009.836	2.3073	0.0279
x4	134.0021	134.4679	141.1906	140.8328	145.7645	145.9984	3657.342	0.6427	0.3245
y1	0.0001	0.0614	1.5013	1.6747	4.1941	6.2330	9256.970	-0.2613	0.3855
y2	0.0005	0.1424	3.3202	3.4736	7.5712	8.8170	1222.855	-1.9776	0.0564
y3	2.9127	5.3661	7.9796	7.6525	8.6331	9.1617	964.463	-1.7162	0.0915
y4	0.0004	0.0730	1.9086	2.2379	6.0307	7.9852	3111.245	-5.7899	0.0000
y5	0.0013	0.1061	2.0996	2.3388	5.8604	8.3729	8844.490	-0.3625	0.3736
Ne1	0.7809	0.8789	0.9754	0.9753	1.0717	1.1460	8928.444	1.0295	0.2348
Ne2	0.8052	0.9142	1.0105	1.0100	1.1043	1.2365	9433.617	-0.4313	0.3635
Ne3	0.8477	0.9508	1.0401	1.0400	1.1298	1.2069	9547.185	1.0817	0.2223
Ne4	0.8743	0.9500	1.0394	1.0397	1.1290	1.2202	9552.571	0.5749	0.3382
Ne5	0.8528	0.9521	1.0395	1.0402	1.1294	1.2321	9514.741	0.1440	0.3948
Ne6	0.8139	0.8942	0.9843	0.9846	1.0764	1.1584	9640.648	1.5176	0.1261
Ne7	0.8035	0.8926	0.9843	0.9845	1.0767	1.1781	10000.000	-1.4268	0.1442
Ne8	0.7781	0.8657	0.9594	0.9599	1.0576	1.1587	9879.686	0.2065	0.3905
Ne9	0.7676	0.8616	0.9585	0.9591	1.0550	1.1387	9484.525	-0.4558	0.3596

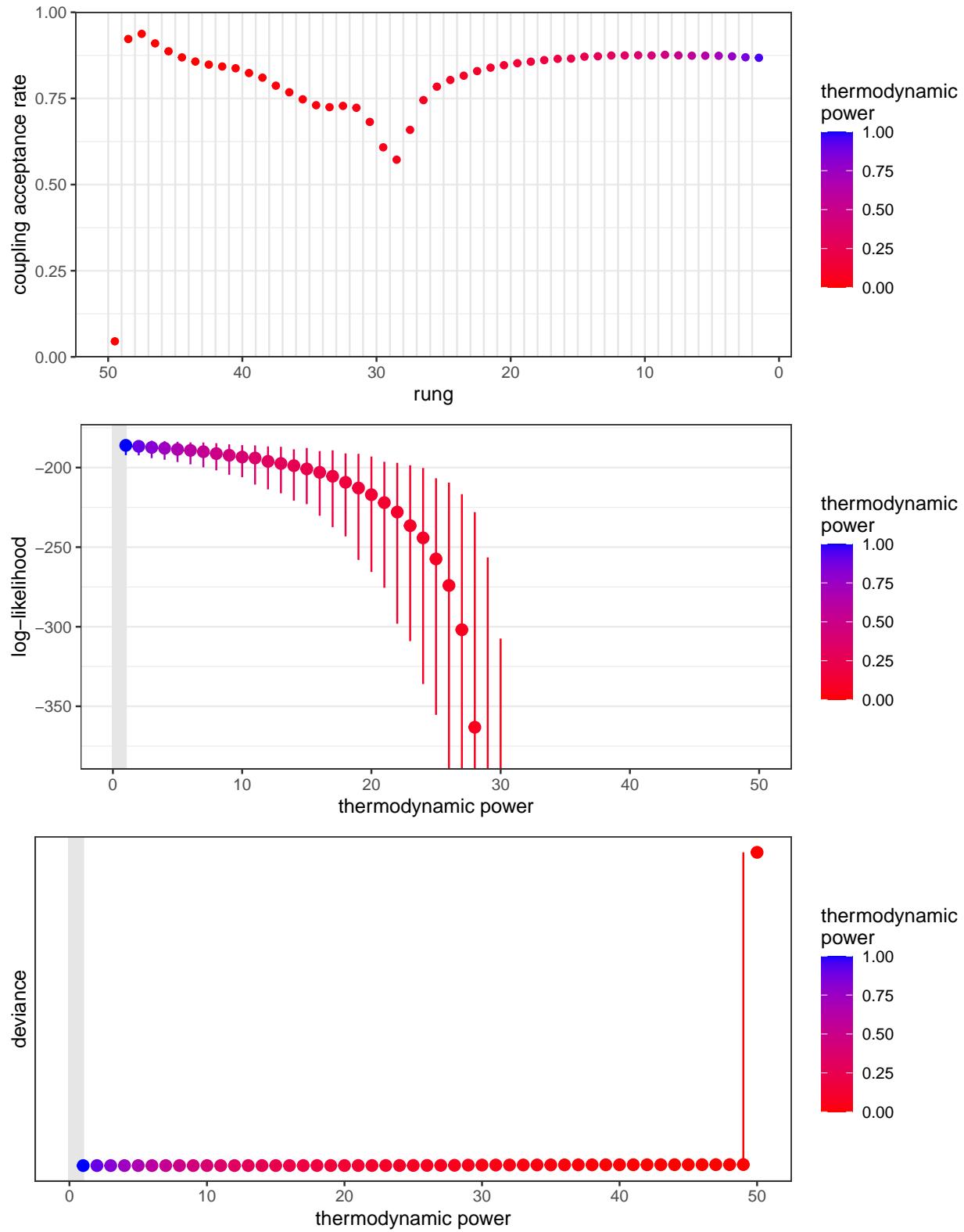
CHE2 with the Potential for Seroreversion Included

Fit Diagnostics

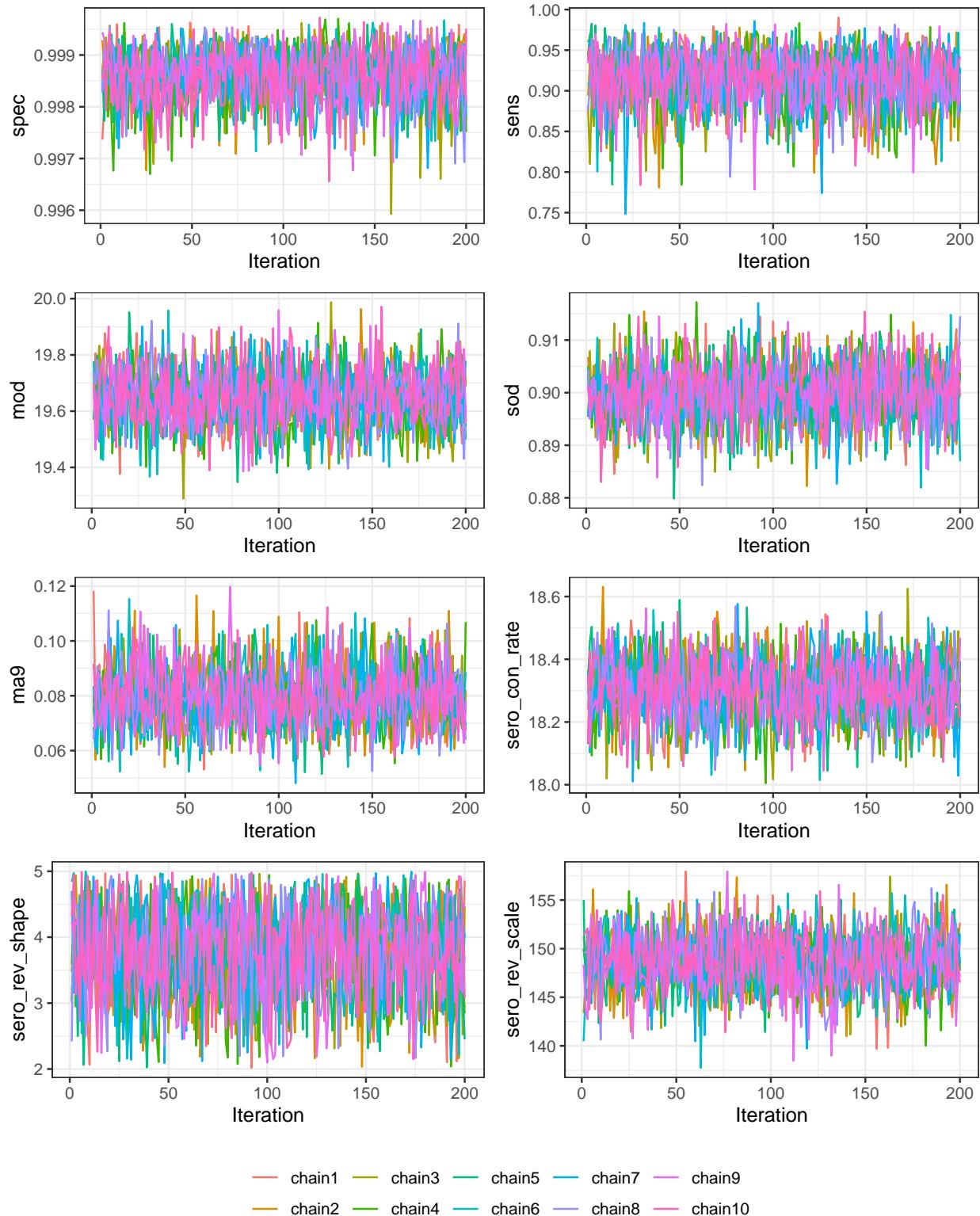
Log Likelihood & Prior Plot



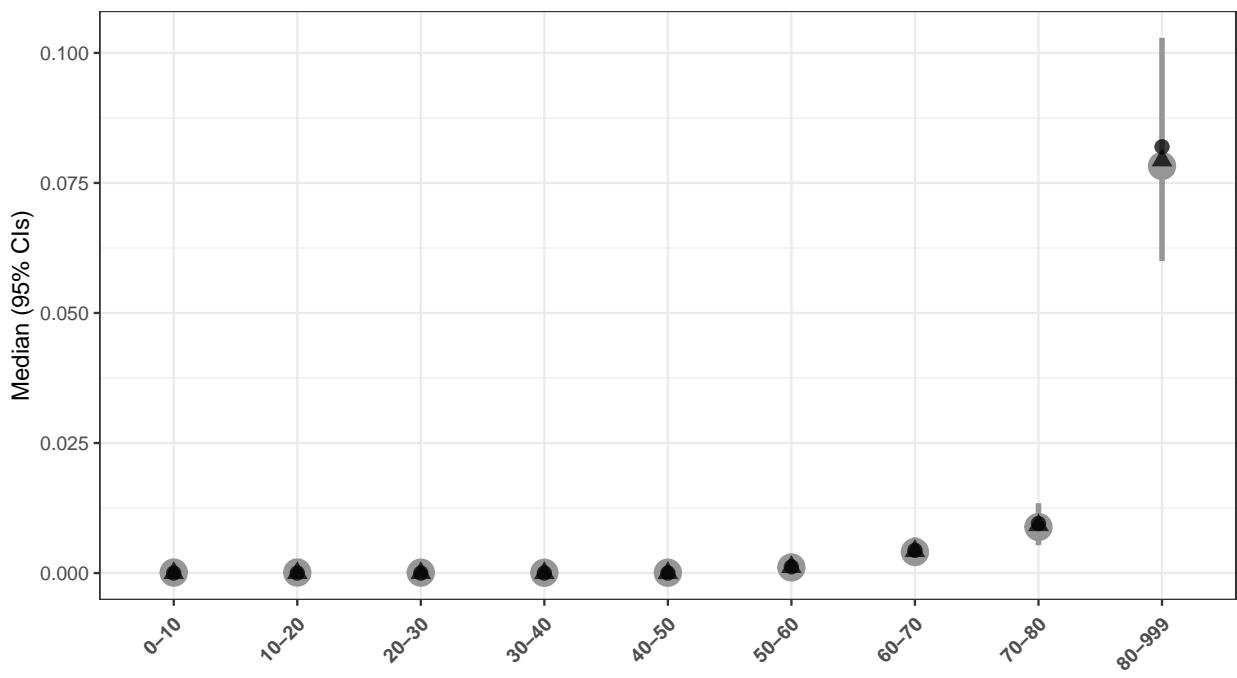
Metropolis Coupling Acceptance Plot



Serological Diagnostics

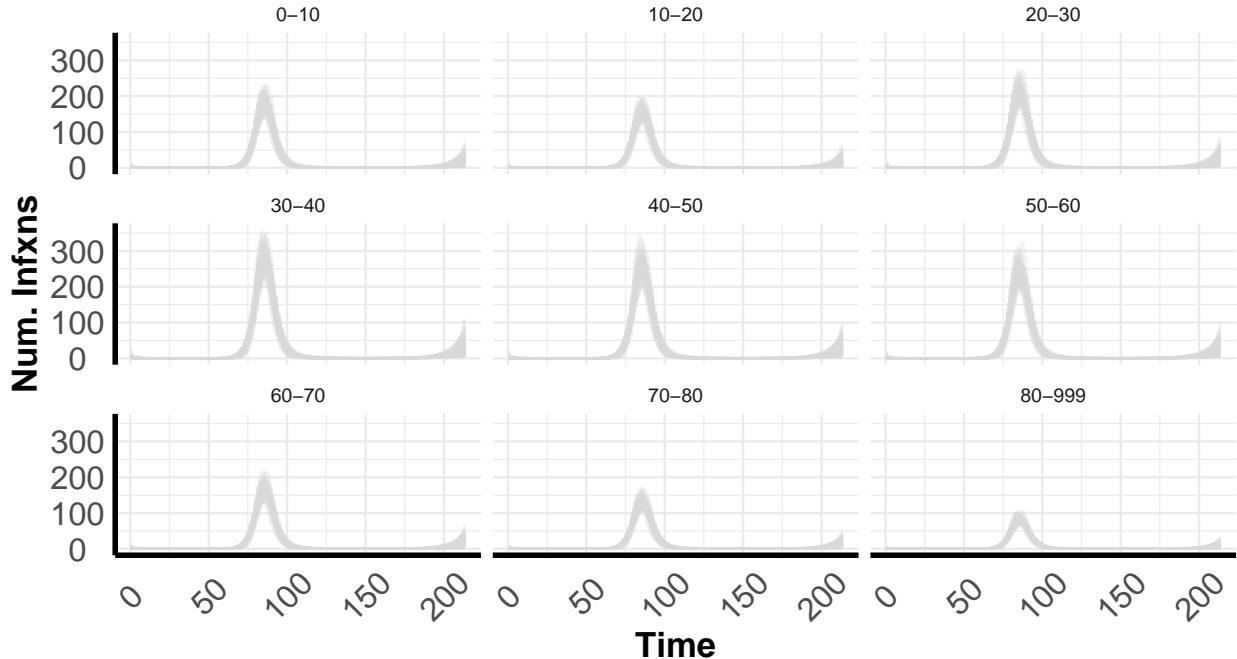


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



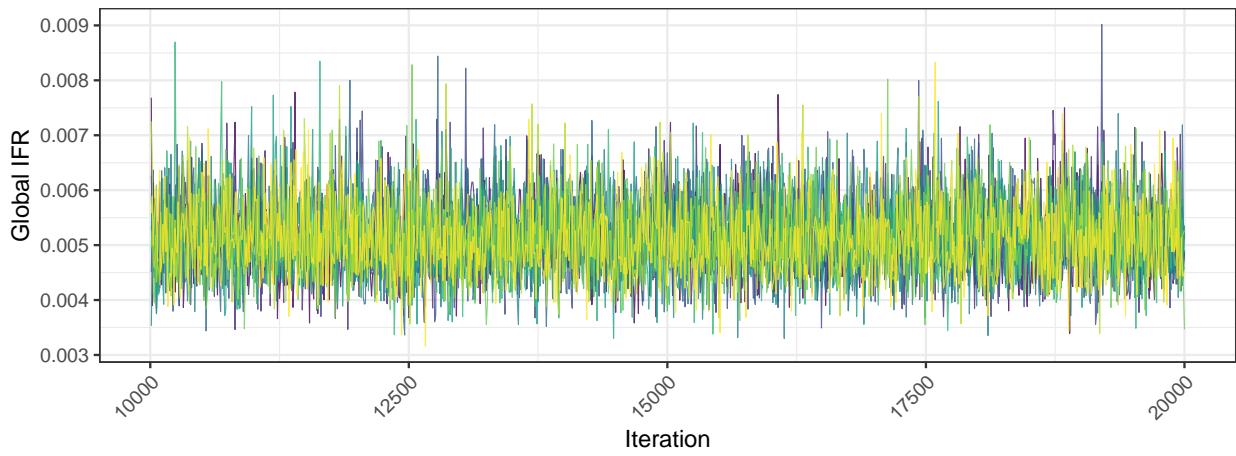
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-10	ma1	0.0000	0.0000	0.0001	0.0001	0.0002	0.0003	9595.069	0.4622	0.3585
10-20	ma2	0.0000	0.0000	0.0001	0.0001	0.0002	0.0003	9290.011	0.4552	0.3597
20-30	ma3	0.0000	0.0000	0.0001	0.0001	0.0002	0.0002	8922.972	-0.1060	0.3967
30-40	ma4	0.0000	0.0000	0.0001	0.0001	0.0001	0.0002	9276.624	1.8685	0.0696
40-50	ma5	0.0000	0.0000	0.0001	0.0001	0.0001	0.0002	9520.864	0.7616	0.2985
50-60	ma6	0.0000	0.0002	0.0011	0.0011	0.0023	0.0039	9345.117	-1.0738	0.2241
60-70	ma7	0.0006	0.0019	0.0041	0.0041	0.0069	0.0107	9581.006	0.3201	0.3790
70-80	ma8	0.0031	0.0054	0.0089	0.0090	0.0134	0.0224	9630.555	0.5126	0.3498
80-999	ma9	0.0446	0.0600	0.0783	0.0791	0.1029	0.1337	8356.276	-0.6414	0.3248

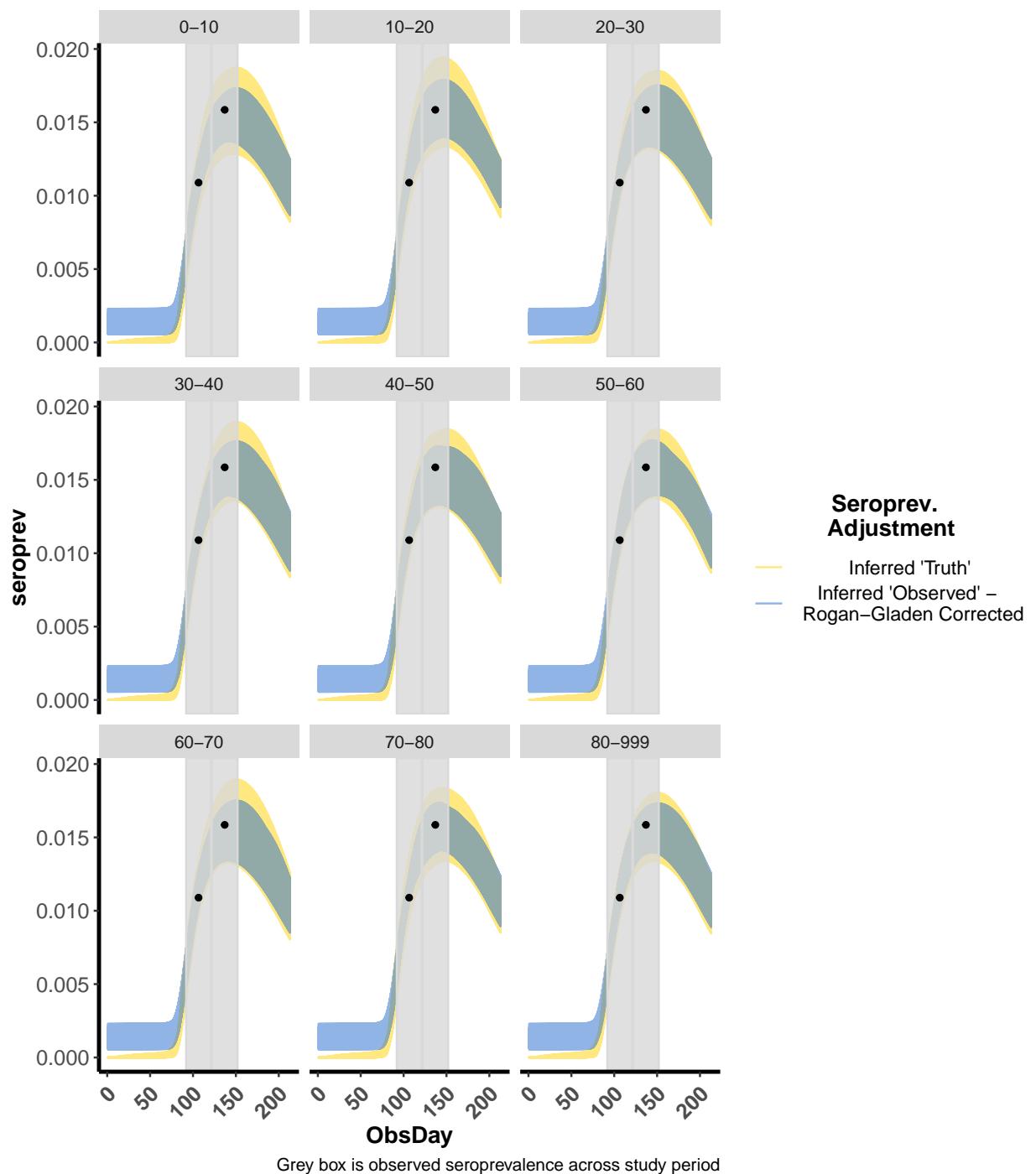
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0033	0.004	0.0051	0.0051	0.0065	0.0091	8182.61	0.7084	0.3104

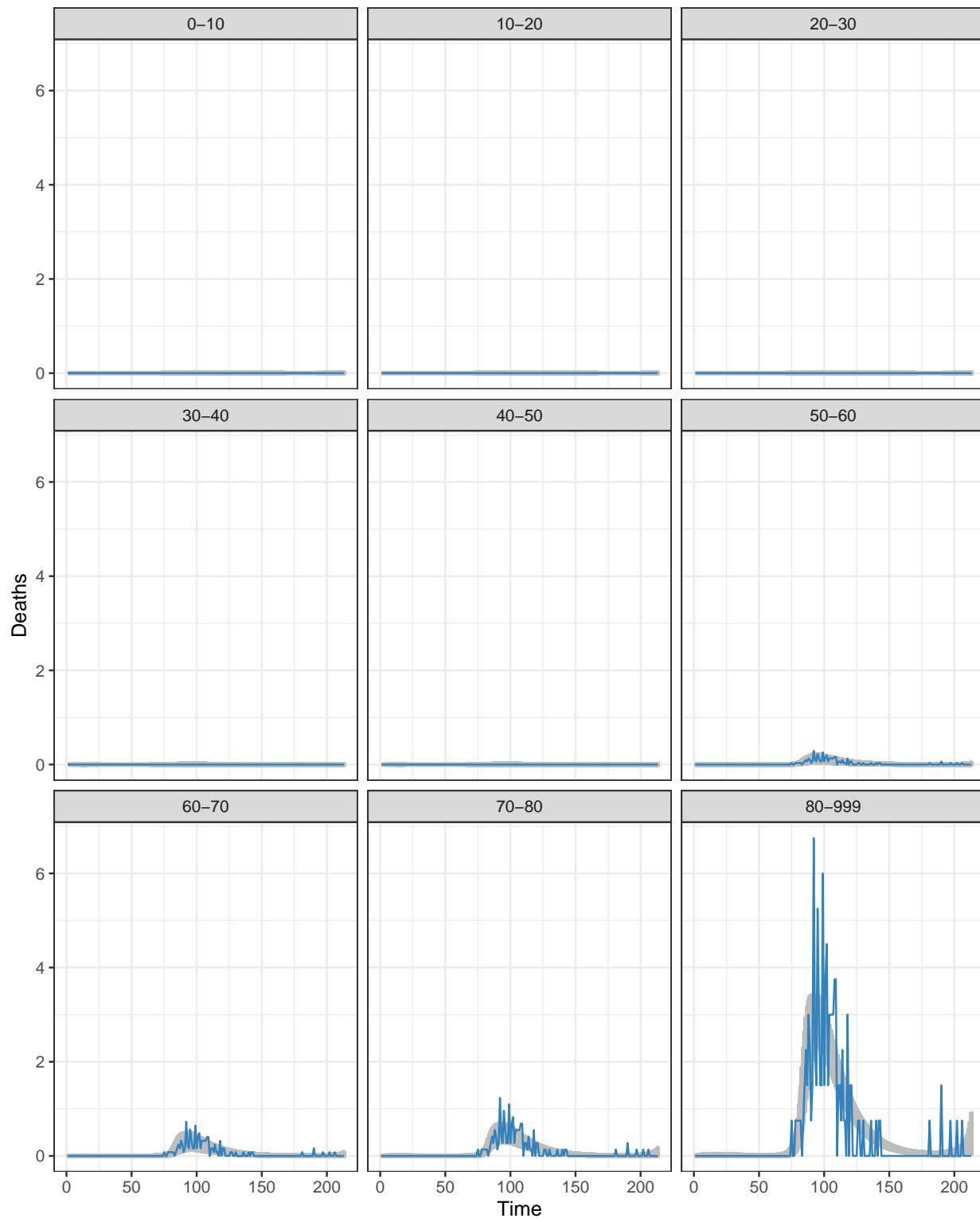
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0034	0.0041	0.0051	0.0051	0.0065	0.0078	1000.0000	1.0302	0.2347
chain2	0.0035	0.0040	0.0051	0.0052	0.0067	0.0076	855.1639	-1.2041	0.1932
chain3	0.0035	0.0040	0.0051	0.0051	0.0066	0.0087	877.3769	-0.1723	0.3931
chain4	0.0035	0.0040	0.0051	0.0052	0.0064	0.0081	838.3899	-0.2081	0.3904
chain5	0.0033	0.0040	0.0051	0.0051	0.0064	0.0075	1041.0498	1.6396	0.1040
chain6	0.0035	0.0040	0.0050	0.0051	0.0065	0.0078	870.3354	0.2155	0.3898
chain7	0.0035	0.0040	0.0051	0.0051	0.0065	0.0091	815.6250	-0.0968	0.3971
chain8	0.0035	0.0040	0.0051	0.0052	0.0065	0.0082	1000.0000	-2.3526	0.0251
chain9	0.0033	0.0040	0.0051	0.0052	0.0065	0.0077	781.5719	1.6865	0.0962
chain10	0.0033	0.0040	0.0051	0.0051	0.0065	0.0084	1000.0000	1.4719	0.1350



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



Grey Lines are Draws from Posterior, Blue Line is Observed Data (from JHU CSSE COVID-19 Data)

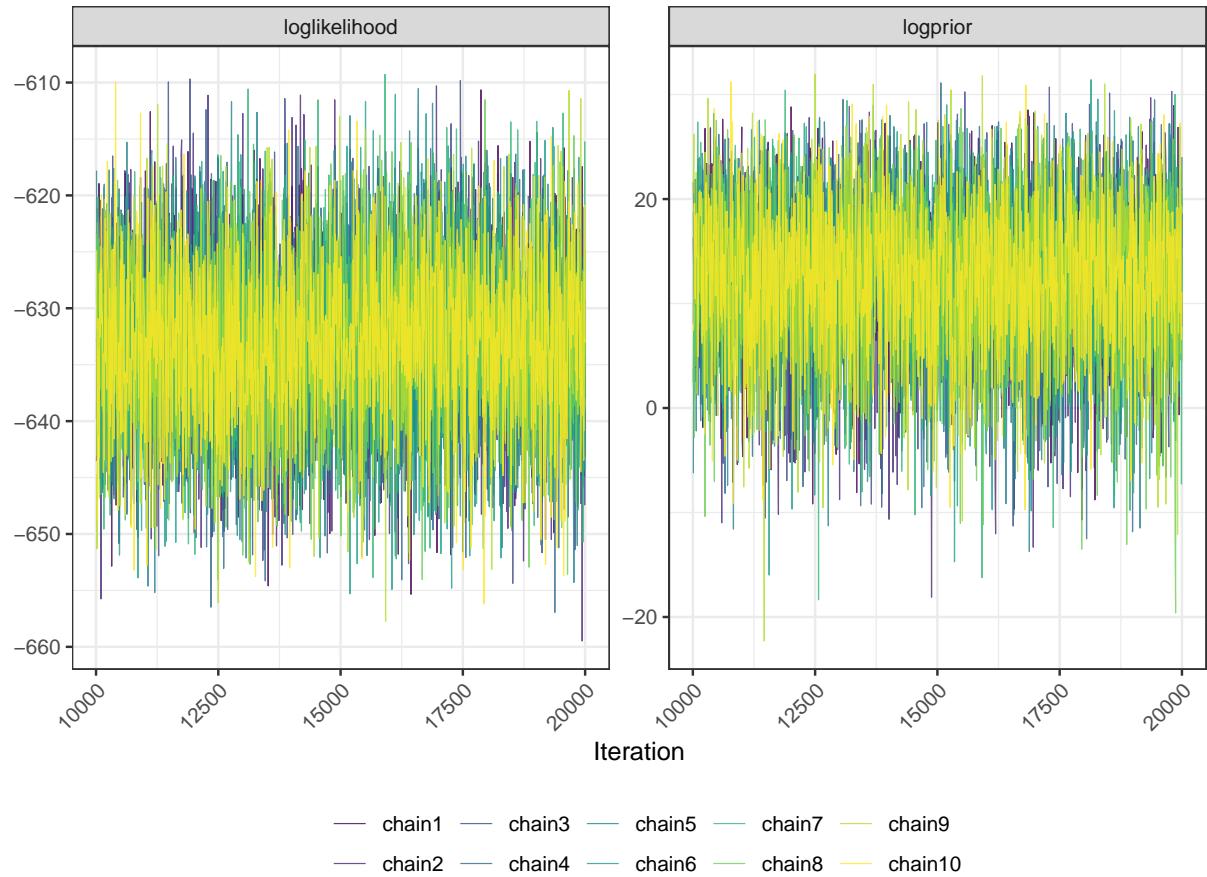
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.1143	2.2132	63.5586	58.7498	75.6437	84.1275	1493.787	0.6569	0.3215
x2	63.4908	72.0465	83.2998	83.3499	96.1241	105.1751	2959.436	-1.6945	0.0949
x3	83.1345	92.0446	104.3713	105.0952	121.2329	211.9061	4348.490	2.0676	0.0471
x4	199.0004	199.2866	205.4957	205.6359	212.5692	212.9990	7033.577	-0.0655	0.3981
y1	0.0007	0.0925	1.6872	1.8780	4.7409	6.4953	7154.360	-0.5069	0.3508
y2	0.0003	0.0639	1.7665	2.0550	5.5118	7.1901	4407.313	1.8654	0.0700
y3	3.1597	4.8376	7.0977	6.8467	7.6855	8.2815	2429.960	-0.8372	0.2810
y4	0.0011	0.3645	4.0334	3.7899	6.4769	7.4760	4868.587	-1.4895	0.1316
y5	0.0040	1.1783	4.1424	4.0374	6.0137	7.4405	8743.465	-1.6333	0.1051
Ne1	0.8150	0.9062	1.0010	1.0007	1.0954	1.1873	10141.010	-0.3890	0.3699
Ne2	0.8212	0.9042	1.0001	0.9999	1.0928	1.1983	9488.178	0.4889	0.3540
Ne3	0.8230	0.9049	1.0004	0.9999	1.0938	1.1755	9625.307	0.1068	0.3967
Ne4	0.8268	0.9047	1.0003	0.9999	1.0944	1.2003	10225.383	0.6236	0.3284
Ne5	0.8371	0.9060	1.0012	1.0006	1.0949	1.1894	10000.000	-0.0070	0.3989
Ne6	0.8033	0.9053	0.9994	0.9999	1.0954	1.1733	10000.000	-1.2100	0.1919
Ne7	0.8132	0.9053	0.9988	0.9992	1.0940	1.1631	9536.160	-0.0671	0.3980
Ne8	0.8197	0.9064	1.0005	1.0006	1.0961	1.1764	9603.600	-0.6705	0.3186
Ne9	0.8107	0.9058	0.9998	1.0003	1.0955	1.1774	9632.032	0.5453	0.3438

CHN1 with the Potential for Seroreversion Included

Fit Diagnostics

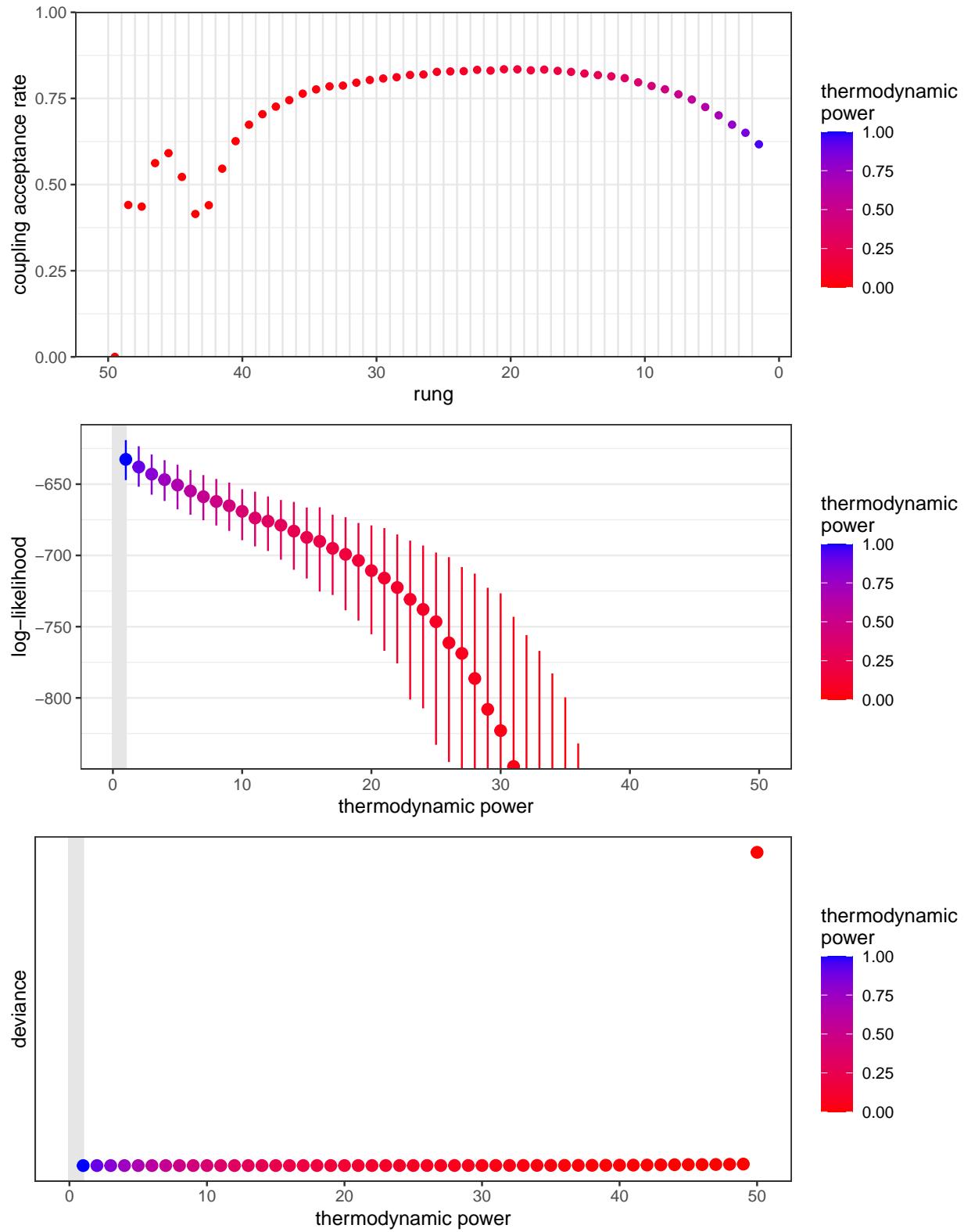
Log Likelihood & Prior Plot



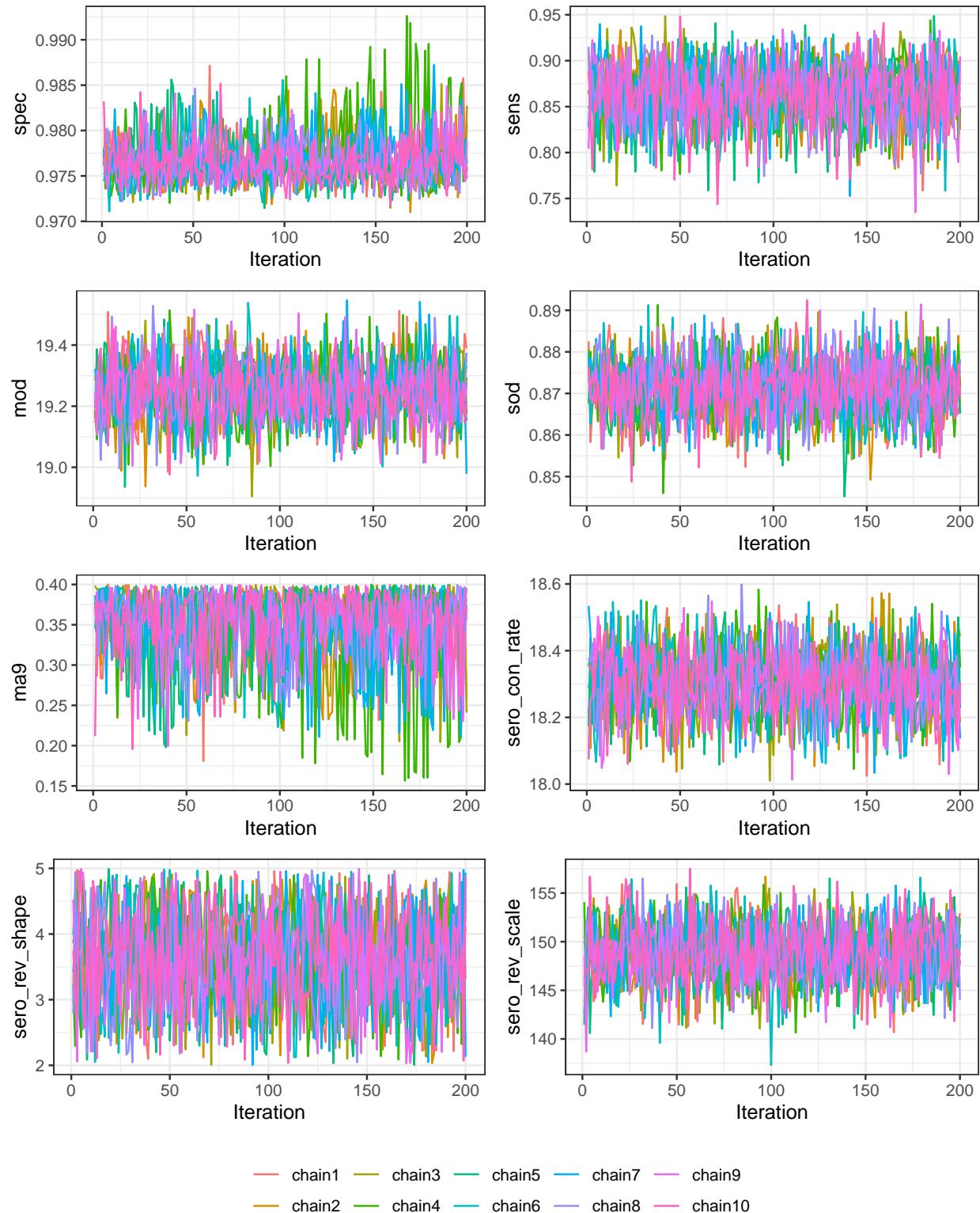
gelman_mpsrf

1

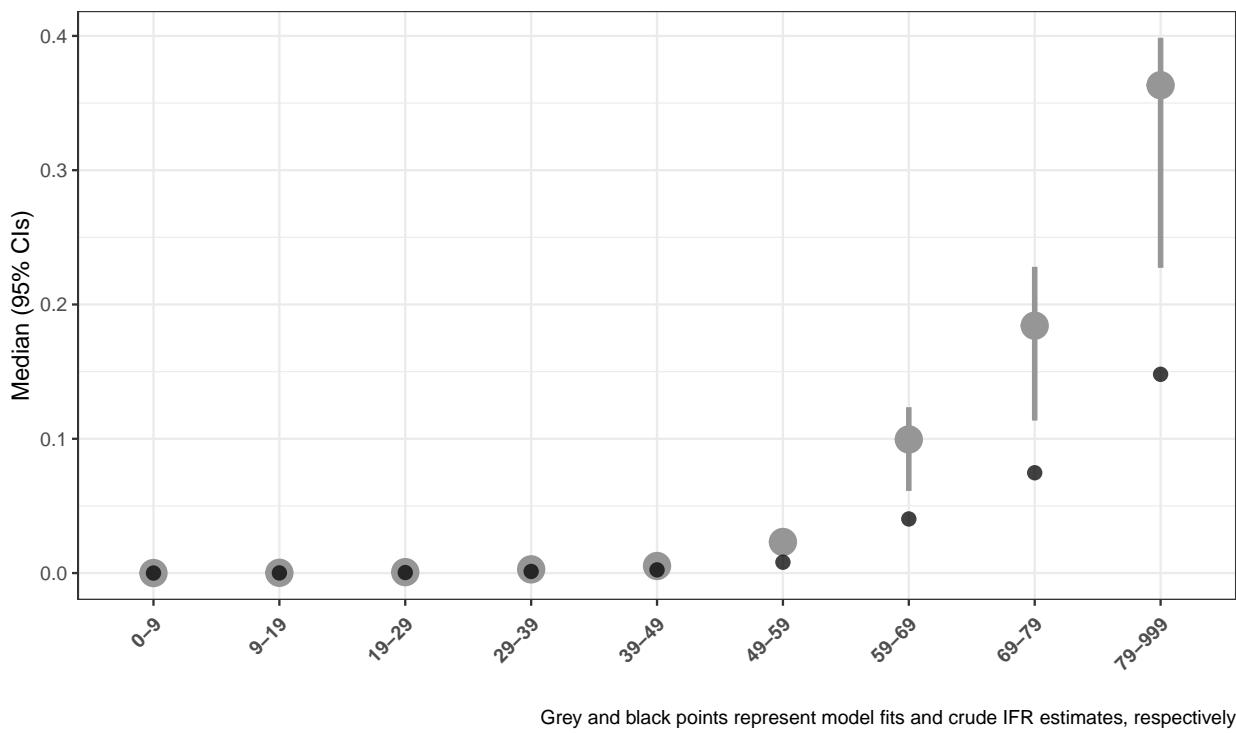
Metropolis Coupling Acceptance Plot



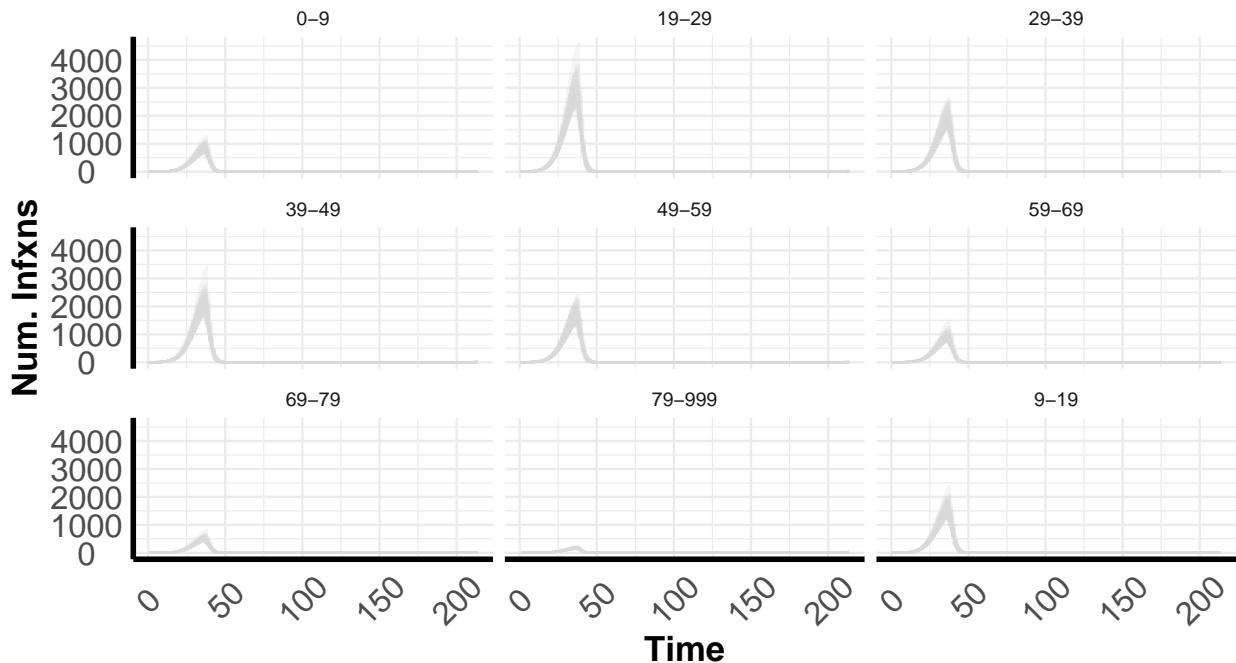
Serological Diagnostics



IFRs & Incidence Curve



Posterior Draws of the Infection Curve



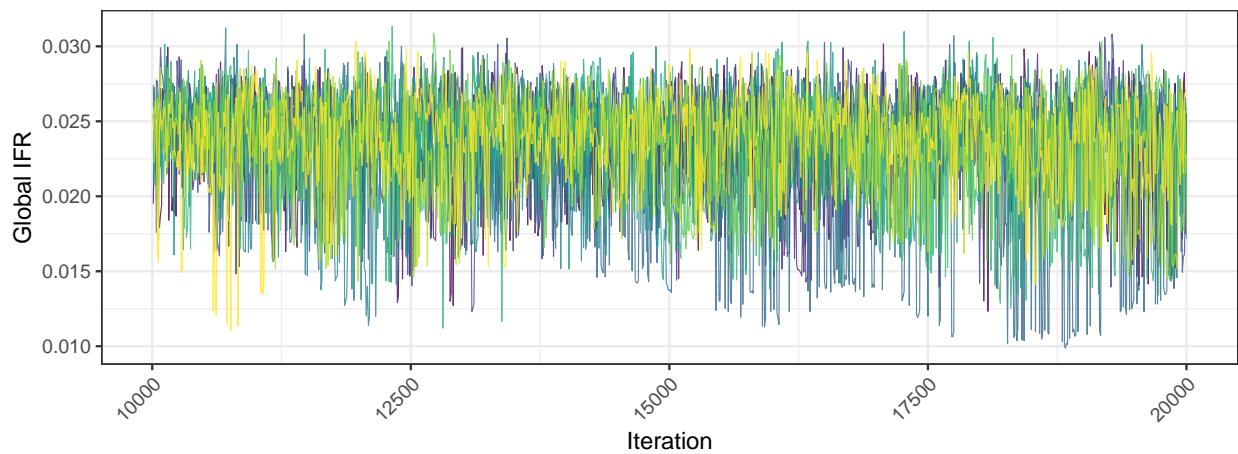
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-9	ma1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	8449.9473	-0.8905	0.2683
9-19	ma2	0.0000	0.0000	0.0002	0.0002	0.0004	0.0009	9224.1077	-0.7835	0.2935
19-29	ma3	0.0002	0.0004	0.0007	0.0007	0.0011	0.0016	3283.3166	-0.2886	0.3827
29-39	ma4	0.0009	0.0017	0.0028	0.0028	0.0038	0.0049	2423.8158	0.8275	0.2833
39-49	ma5	0.0019	0.0032	0.0053	0.0052	0.0069	0.0091	1757.7070	0.2700	0.3847
49-59	ma6	0.0093	0.0140	0.0232	0.0227	0.0291	0.0355	1144.1959	0.0740	0.3979
59-69	ma7	0.0383	0.0611	0.0995	0.0976	0.1235	0.1446	1092.3236	-0.1841	0.3922
69-79	ma8	0.0743	0.1136	0.1842	0.1805	0.2281	0.2735	1030.5556	-0.2719	0.3845
79-999	ma9	0.1564	0.2273	0.3633	0.3485	0.3986	0.4000	790.8496	0.5383	0.3451

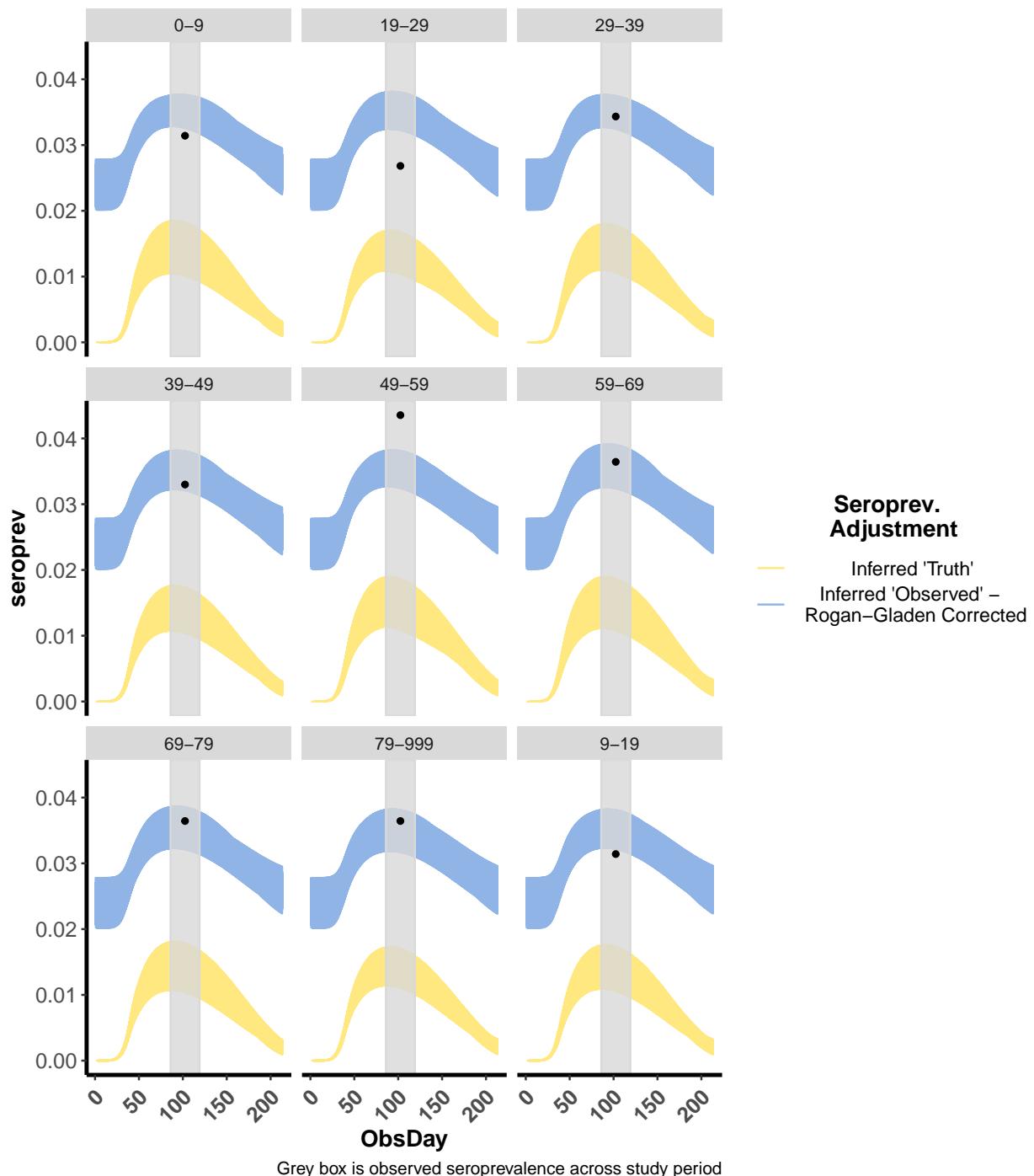
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0098	0.0151	0.0243	0.0237	0.0289	0.0317	2849.37	5.4245	0

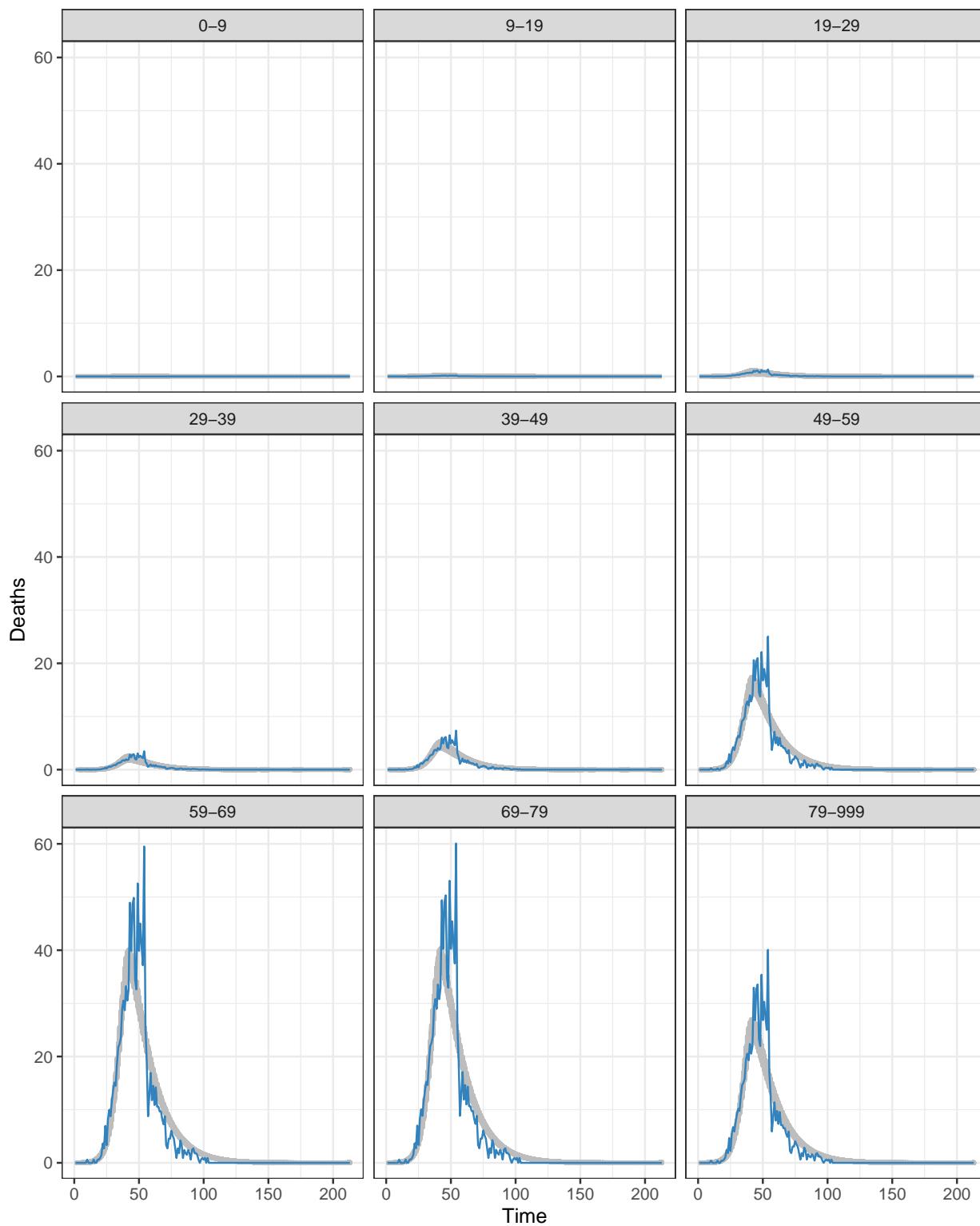
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0125	0.0166	0.0241	0.0238	0.0289	0.0305	319.8485	1.1270	0.2114
chain2	0.0140	0.0163	0.0243	0.0238	0.0287	0.0305	223.8409	1.8980	0.0659
chain3	0.0126	0.0161	0.0249	0.0242	0.0289	0.0313	468.3310	0.7986	0.2900
chain4	0.0098	0.0112	0.0238	0.0225	0.0288	0.0315	162.5153	6.0474	0.0000
chain5	0.0115	0.0152	0.0245	0.0238	0.0290	0.0314	87.9884	-0.5879	0.3356
chain6	0.0138	0.0170	0.0245	0.0240	0.0292	0.0311	226.1230	2.9452	0.0052
chain7	0.0113	0.0148	0.0243	0.0234	0.0290	0.0317	109.3683	2.1978	0.0357
chain8	0.0159	0.0175	0.0242	0.0238	0.0290	0.0308	82.7001	4.3253	0.0000
chain9	0.0140	0.0159	0.0242	0.0235	0.0286	0.0304	147.6213	3.8016	0.0003
chain10	0.0112	0.0166	0.0244	0.0240	0.0290	0.0316	298.0327	-1.6947	0.0949



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



Grey Lines are Draws from Posterior, Blue Line is Observed Data (from JHU CSSE COVID-19 Data)

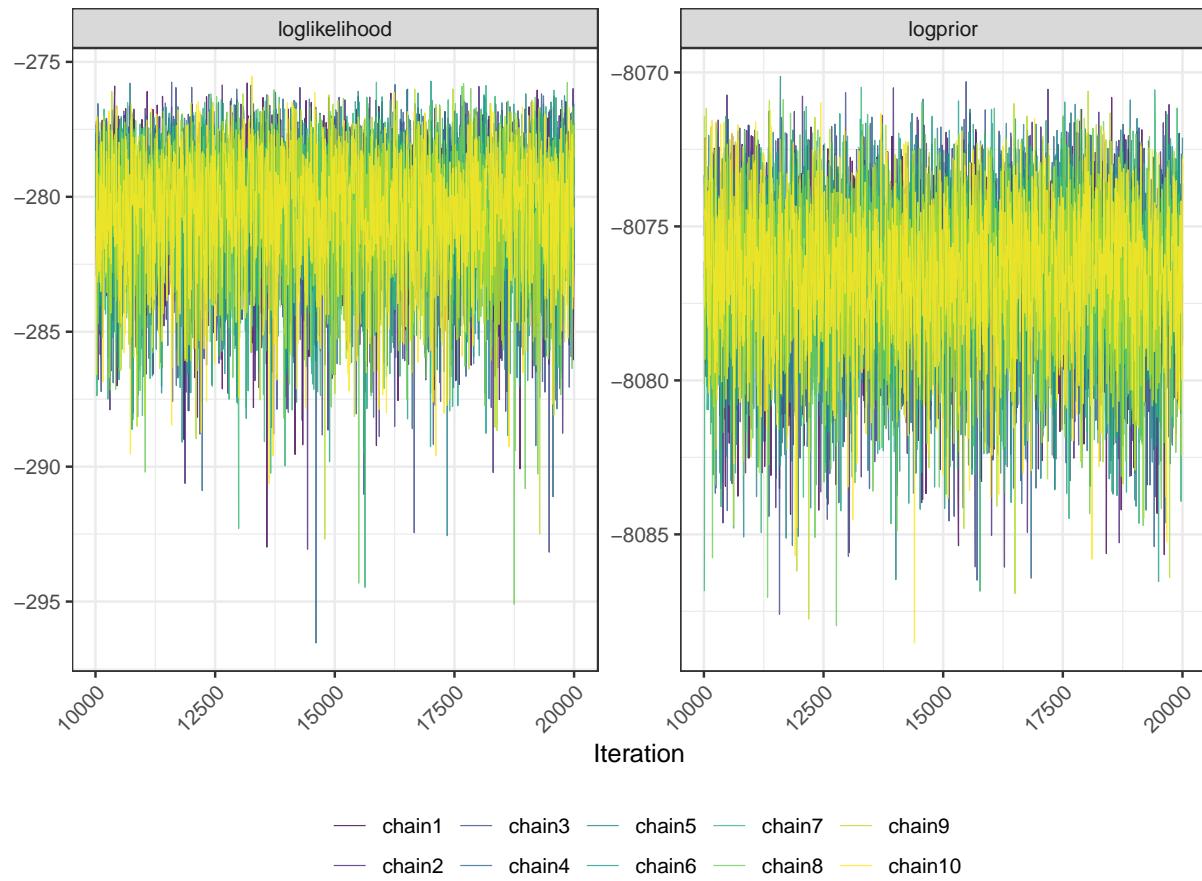
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.1916	4.3176	28.3468	24.6601	36.7465	58.2284	786.6278	2.1623	0.0385
x2	31.1896	35.2424	38.2917	40.2538	50.2205	211.7852	1072.5233	-3.4041	0.0012
x3	39.7496	45.5185	53.0709	58.9437	211.9060	212.9088	933.6246	0.1978	0.3912
x4	199.0005	200.5641	209.0602	208.3631	212.8698	212.9997	3347.2952	-2.0382	0.0500
y1	0.0025	0.4317	2.0490	2.0113	3.3188	4.4590	1784.7748	0.3983	0.3685
y2	0.0084	2.6092	8.7908	7.5992	9.7823	10.2415	934.2445	3.4586	0.0010
y3	0.1983	4.0650	9.0492	8.4042	9.8214	10.3444	943.9878	3.5583	0.0007
y4	0.0001	0.0663	1.8166	2.1433	5.8120	8.6461	2182.4706	1.5239	0.1249
y5	0.0002	0.0607	1.3258	1.5758	4.4158	7.9976	7344.9882	1.0535	0.2290
Ne1	0.8181	0.8999	0.9971	0.9972	1.0958	1.2047	9387.5762	-0.3336	0.3773
Ne2	0.8237	0.8976	0.9975	0.9973	1.0947	1.1891	9246.3036	-0.5611	0.3408
Ne3	0.8010	0.8807	0.9784	0.9778	1.0734	1.1581	9491.5485	0.6070	0.3318
Ne4	0.8248	0.8997	0.9952	0.9955	1.0913	1.1685	9515.5569	-1.5519	0.1197
Ne5	0.8030	0.8938	0.9910	0.9906	1.0868	1.1966	8305.2096	0.0043	0.3989
Ne6	0.8470	0.9332	1.0281	1.0282	1.1260	1.2329	7906.5772	0.1066	0.3967
Ne7	0.8053	0.8975	0.9967	0.9971	1.0965	1.1782	6353.2037	1.1160	0.2140
Ne8	0.8191	0.9006	1.0001	0.9999	1.0979	1.1811	5799.1994	1.6125	0.1087
Ne9	0.8367	0.9190	1.0151	1.0156	1.1153	1.1925	4766.5234	-0.7602	0.2988

DNK1 with the Potential for Seroreversion Included

Fit Diagnostics

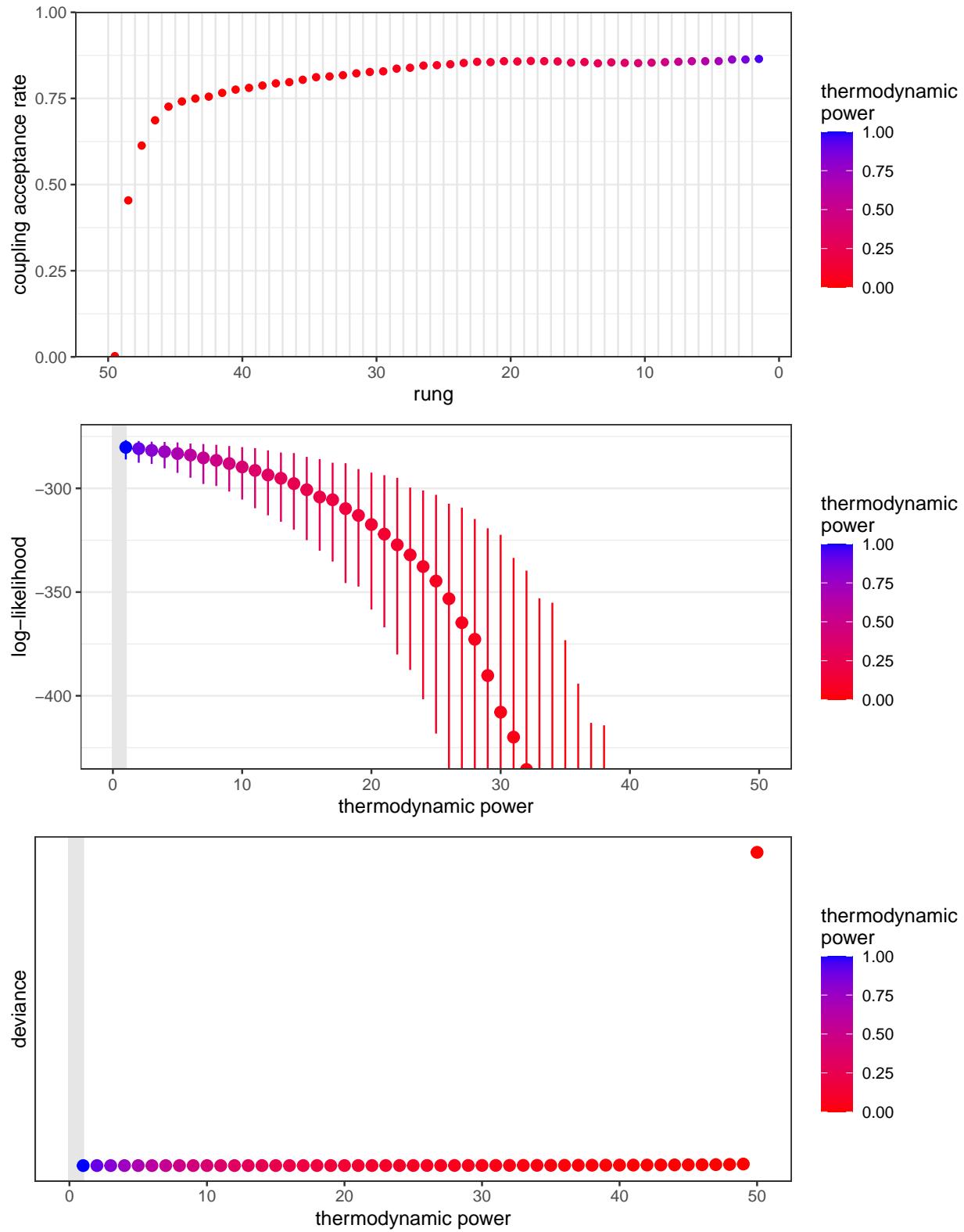
Log Likelihood & Prior Plot



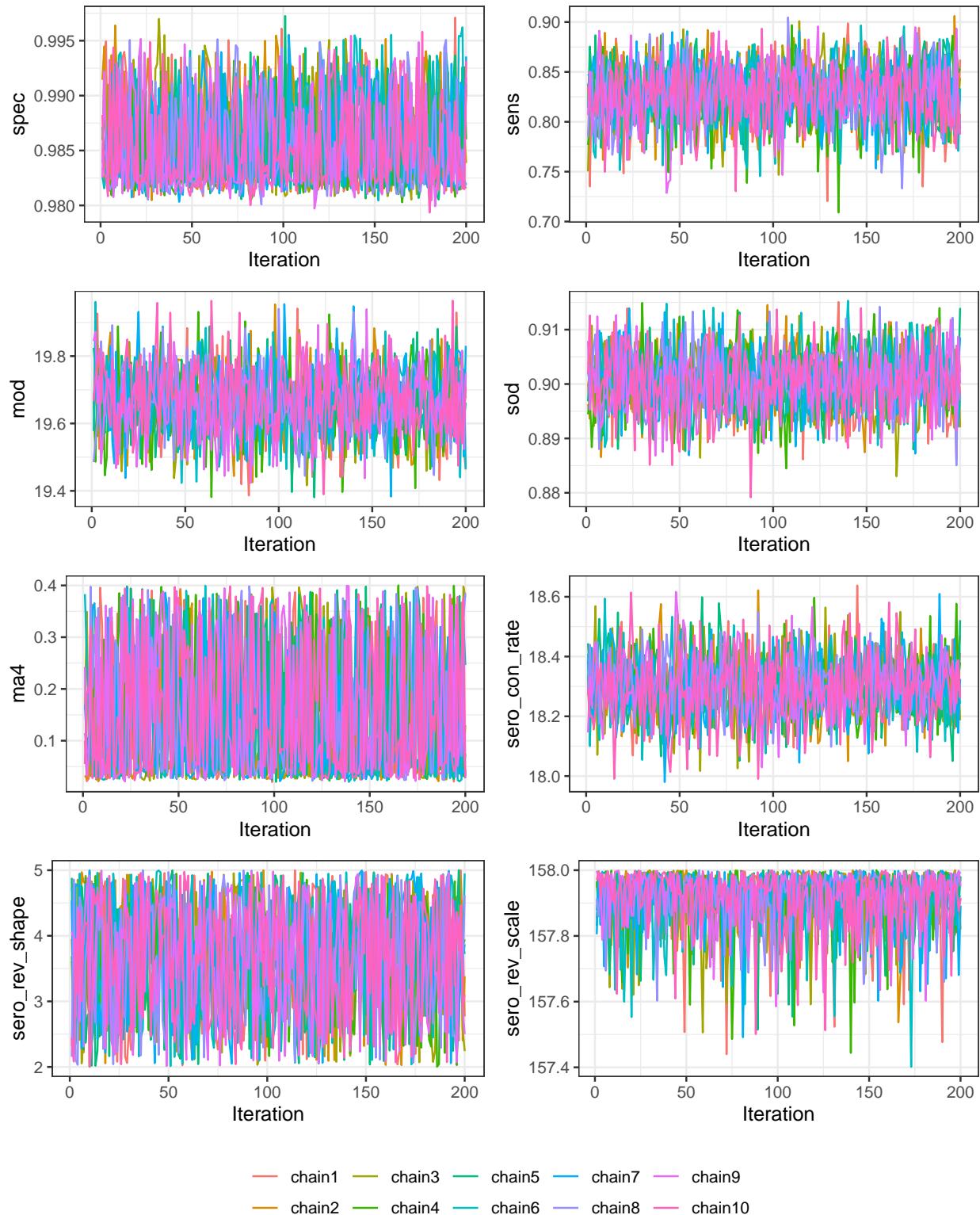
gelman_mpsrf

1

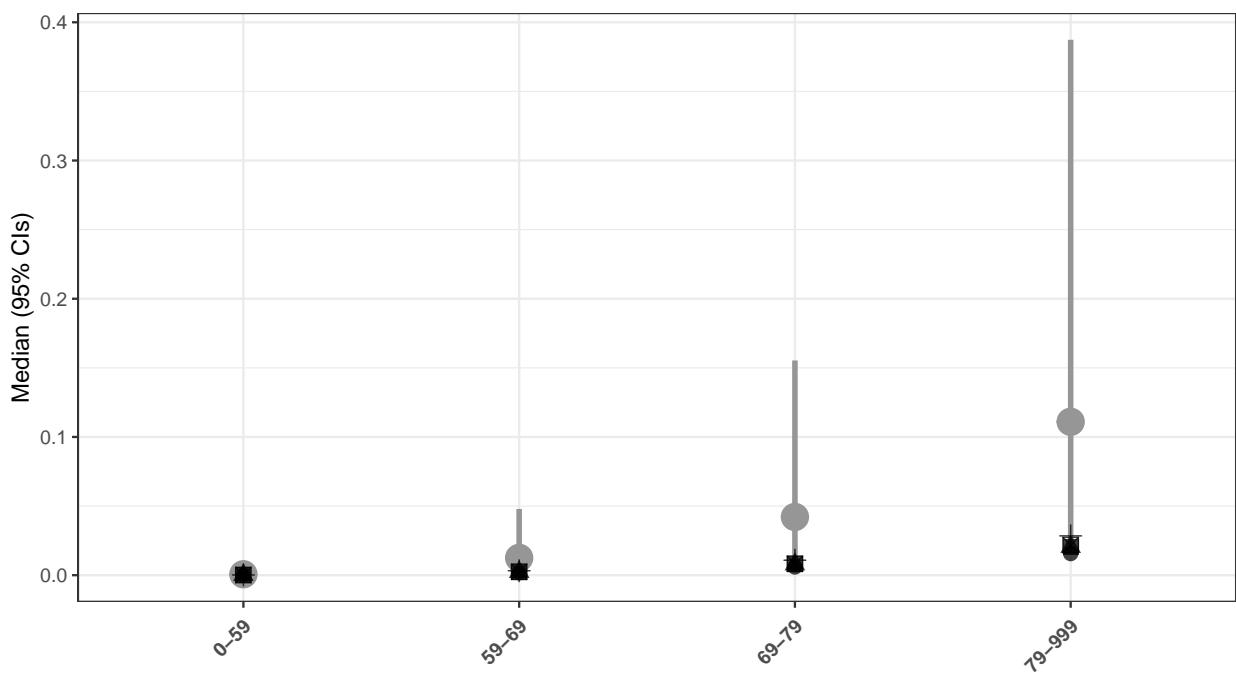
Metropolis Coupling Acceptance Plot



Serological Diagnostics

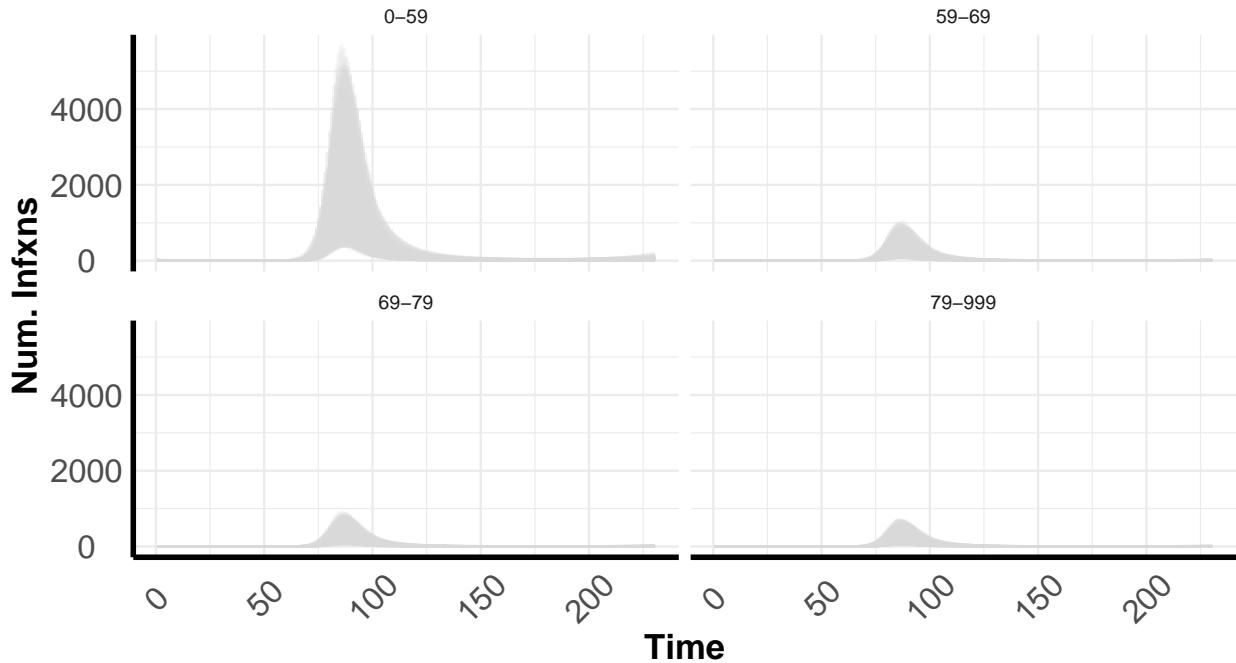


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



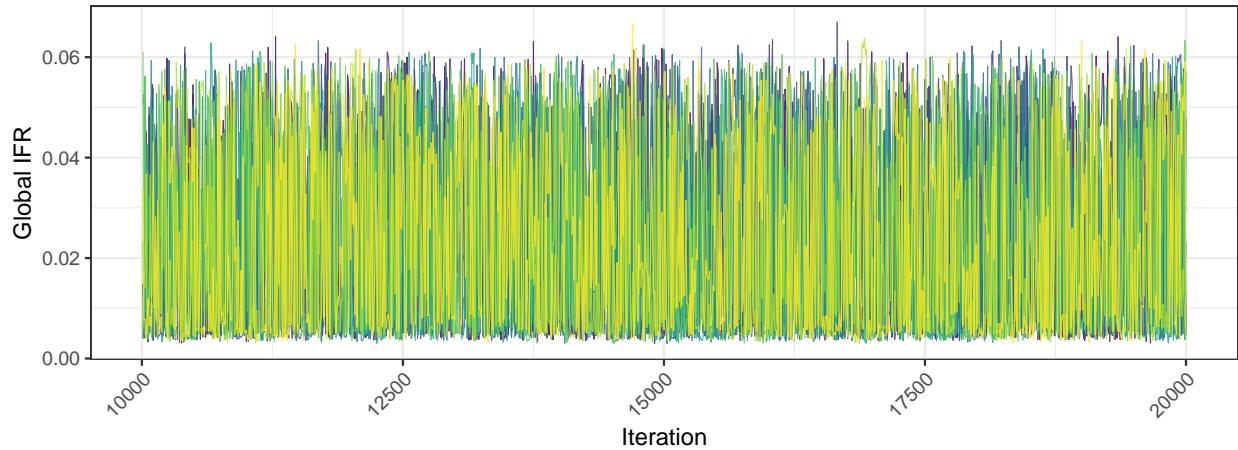
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-59	ma1	0.0000	0.0001	0.0007	0.0010	0.0029	0.0044	3367.239	0.4239	0.3647
59-69	ma2	0.0019	0.0028	0.0125	0.0180	0.0479	0.0737	2906.623	0.3927	0.3693
69-79	ma3	0.0069	0.0096	0.0421	0.0600	0.1553	0.2079	2824.901	0.4156	0.3659
79-999	ma4	0.0194	0.0254	0.1110	0.1563	0.3873	0.4000	2818.148	0.4209	0.3651

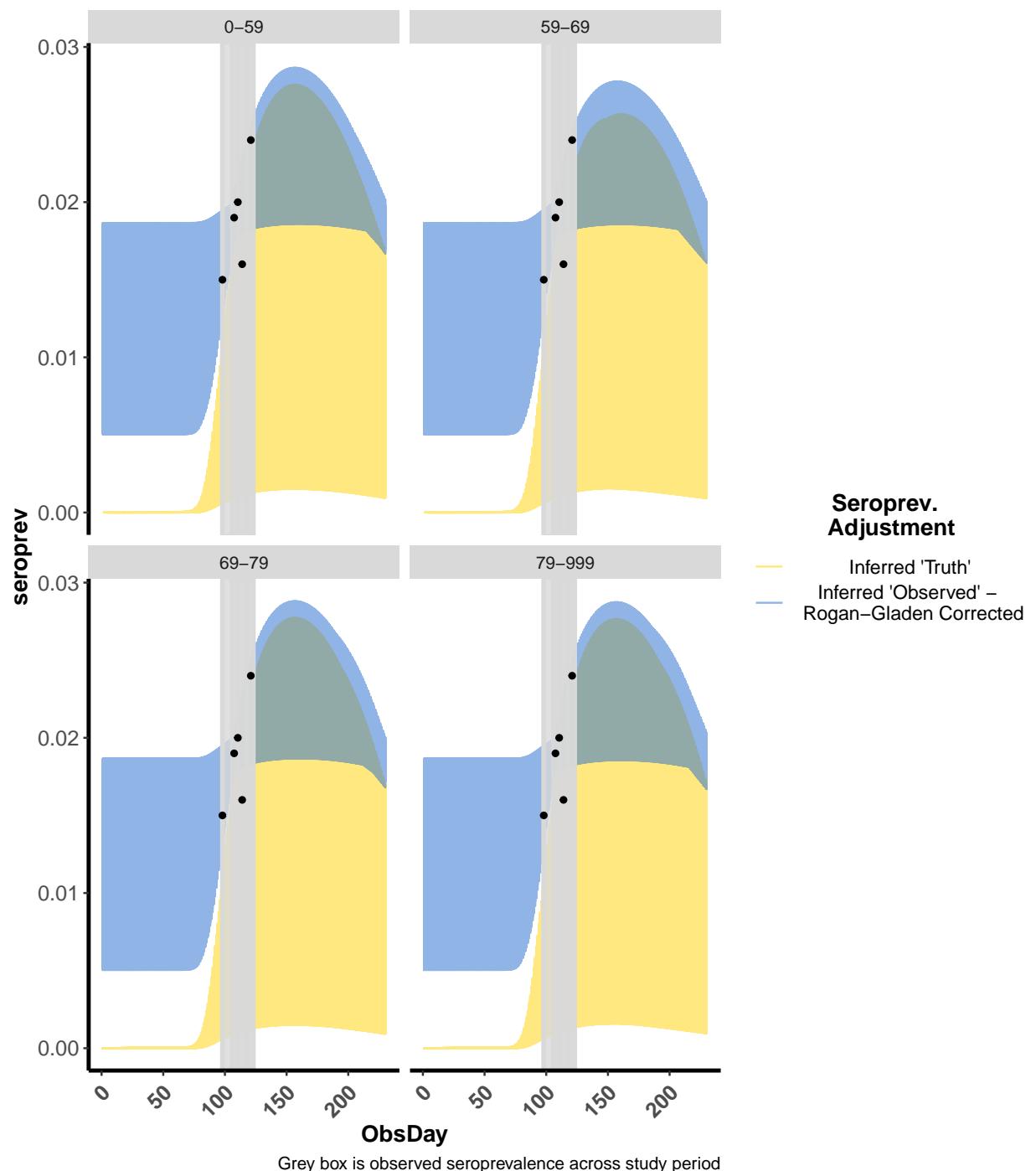
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0029	0.0038	0.0166	0.0234	0.0587	0.0731	4887.041	-1.6944	0.095

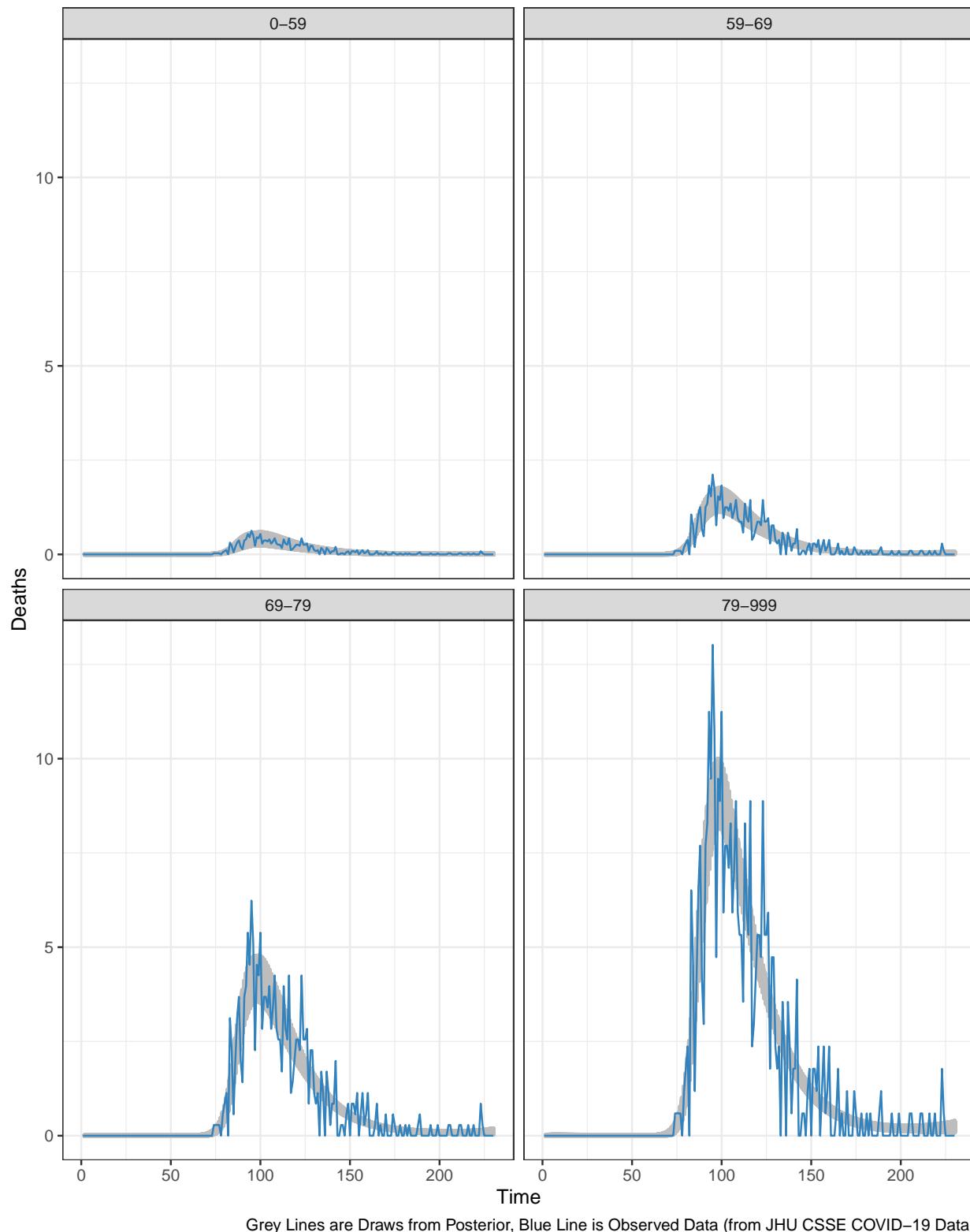
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0030	0.0039	0.0168	0.0237	0.0596	0.0685	631.8309	2.0747	0.0464
chain2	0.0033	0.0038	0.0107	0.0208	0.0583	0.0692	96.2975	-2.7834	0.0083
chain3	0.0032	0.0039	0.0151	0.0224	0.0582	0.0691	463.7752	-3.8984	0.0002
chain4	0.0034	0.0043	0.0261	0.0274	0.0596	0.0708	587.7114	-3.8141	0.0003
chain5	0.0030	0.0038	0.0148	0.0231	0.0589	0.0636	525.7128	0.4781	0.3558
chain6	0.0031	0.0036	0.0128	0.0205	0.0579	0.0664	504.6511	1.7483	0.0865
chain7	0.0029	0.0039	0.0180	0.0232	0.0580	0.0650	776.5744	1.6073	0.1096
chain8	0.0030	0.0038	0.0208	0.0256	0.0592	0.0680	395.3308	-1.0054	0.2407
chain9	0.0031	0.0037	0.0141	0.0229	0.0591	0.0648	666.7633	1.0944	0.2192
chain10	0.0032	0.0039	0.0185	0.0241	0.0582	0.0731	596.0387	-2.6693	0.0113



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



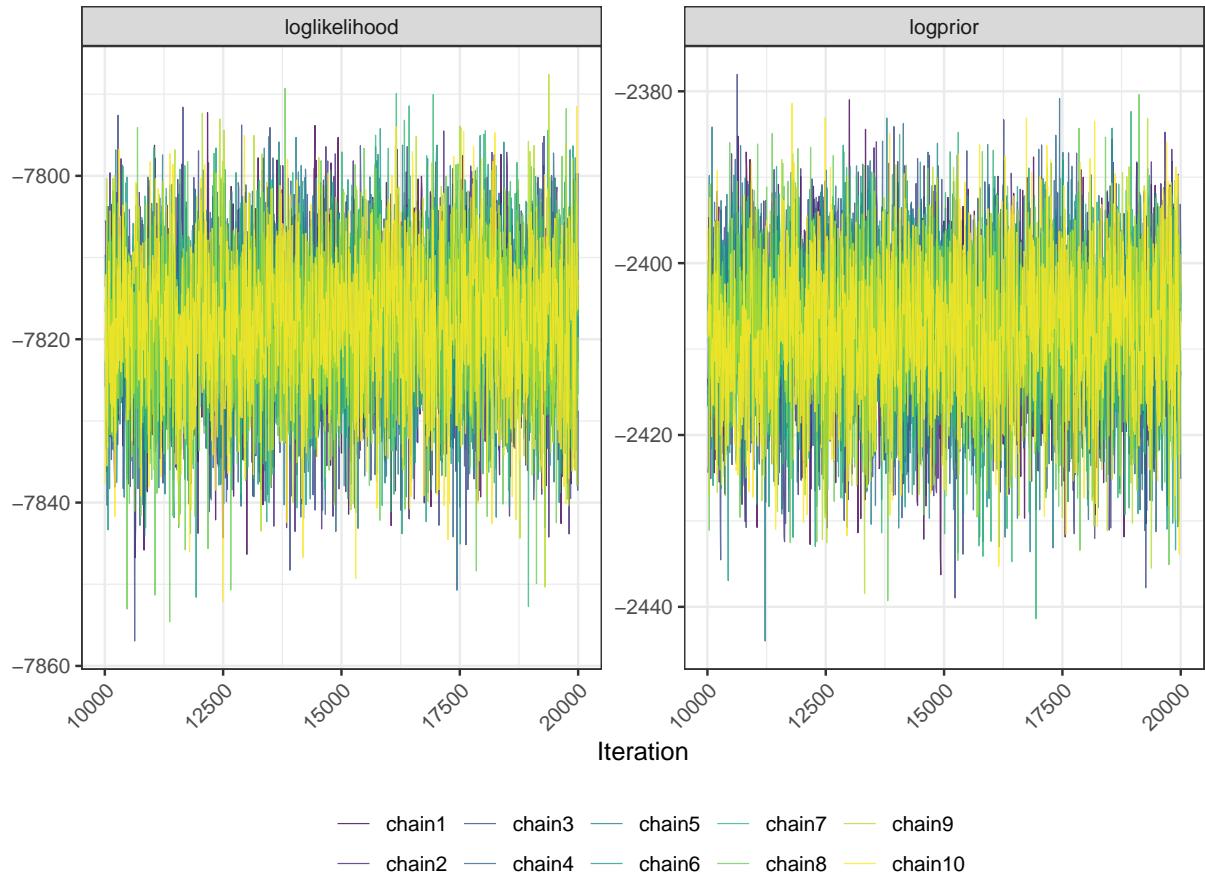
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.0659	1.8940	61.9931	55.7927	71.8884	82.3640	1388.194	2.4454	0.0201
x2	63.6750	73.7336	81.1289	81.5145	90.3732	98.0632	2537.909	-2.2279	0.0333
x3	83.5902	90.8555	100.5146	101.2991	116.3127	141.2401	3869.420	-0.1094	0.3966
x4	219.0002	219.3675	226.2072	226.1355	232.6726	232.9994	5206.477	-0.2748	0.3842
y1	0.0003	0.0513	1.1960	1.4517	4.1513	6.6421	3781.505	-1.3515	0.1601
y2	0.0000	0.0561	1.3023	1.5943	4.8321	7.4999	4848.189	0.1163	0.3963
y3	2.8915	4.8799	6.9694	7.0158	8.8594	9.2342	1867.077	-0.9498	0.2541
y4	0.3694	3.9507	6.2210	6.2674	8.2743	8.9188	2423.101	-0.3196	0.3791
y5	0.0248	1.2701	3.3688	3.3944	5.4999	7.2022	3163.535	-0.4003	0.3682
Ne1	0.8294	0.9000	0.9973	0.9971	1.0947	1.1674	9405.245	-1.3529	0.1597
Ne2	0.8198	0.8986	0.9960	0.9957	1.0937	1.1925	9439.199	1.7084	0.0927
Ne3	0.8083	0.9067	1.0027	1.0025	1.0962	1.1874	10000.000	-0.4726	0.3568
Ne4	0.7942	0.9077	1.0052	1.0050	1.1000	1.2059	9145.478	-0.6372	0.3257

ESP1-2 with the Potential for Seroreversion Included

Fit Diagnostics

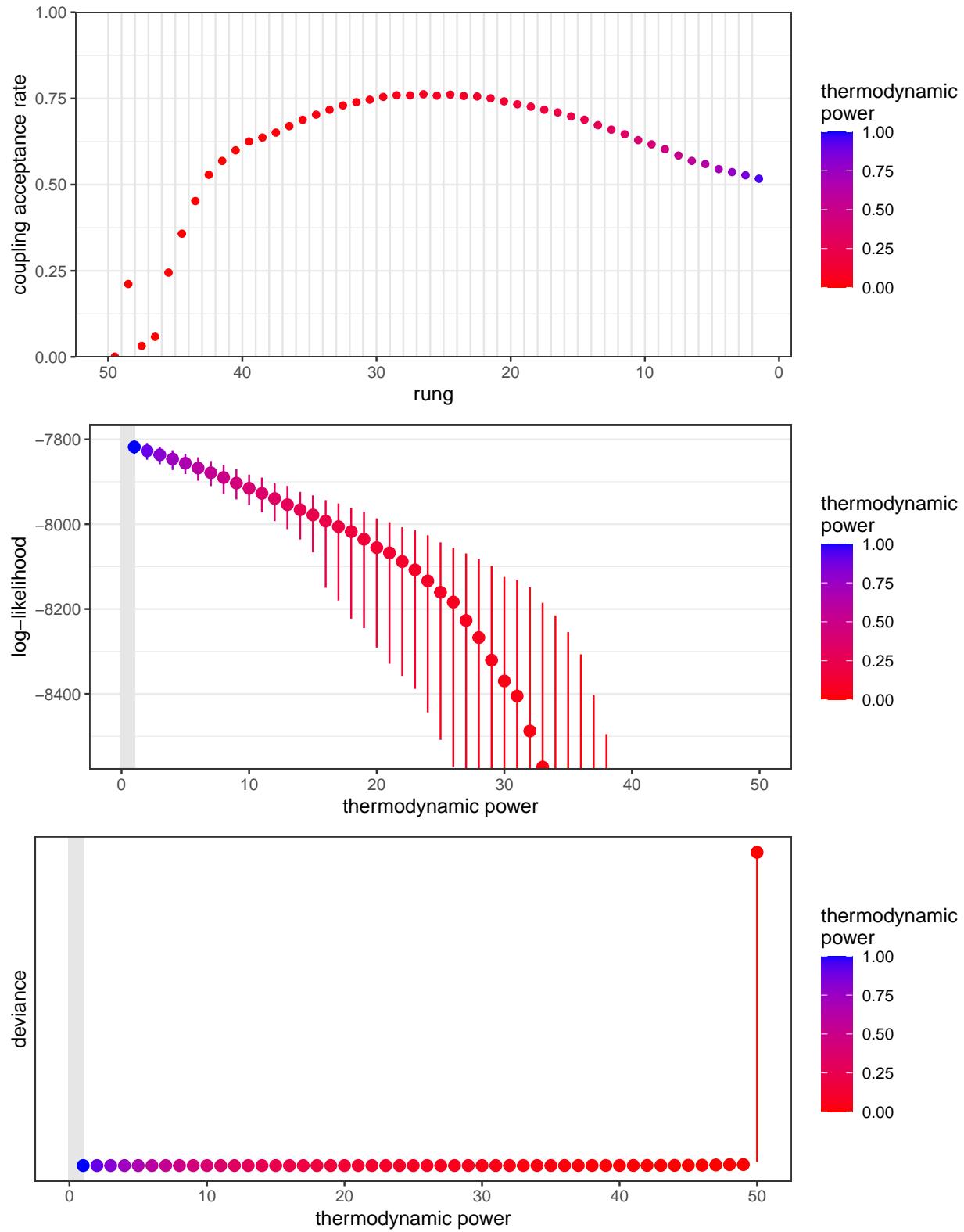
Log Likelihood & Prior Plot



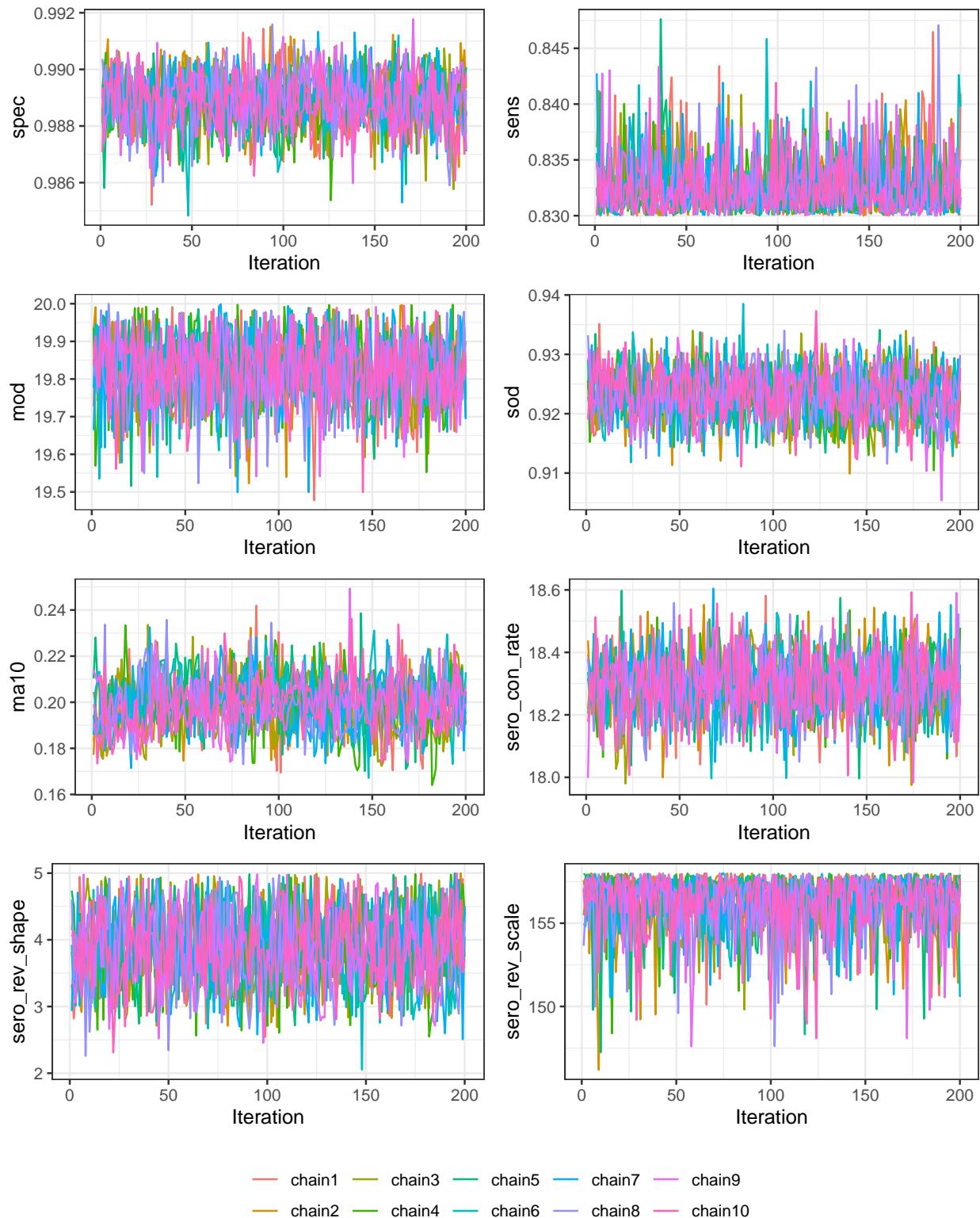
gelman_mpsrf

1.03

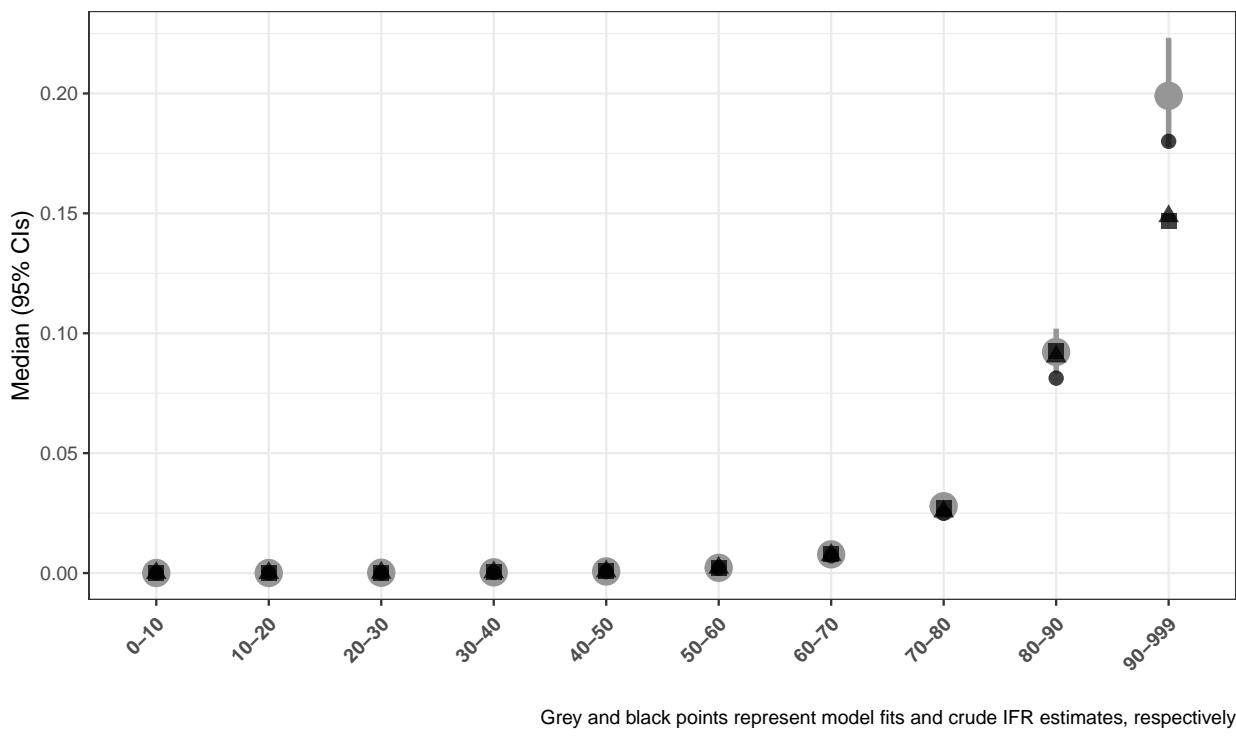
Metropolis Coupling Acceptance Plot



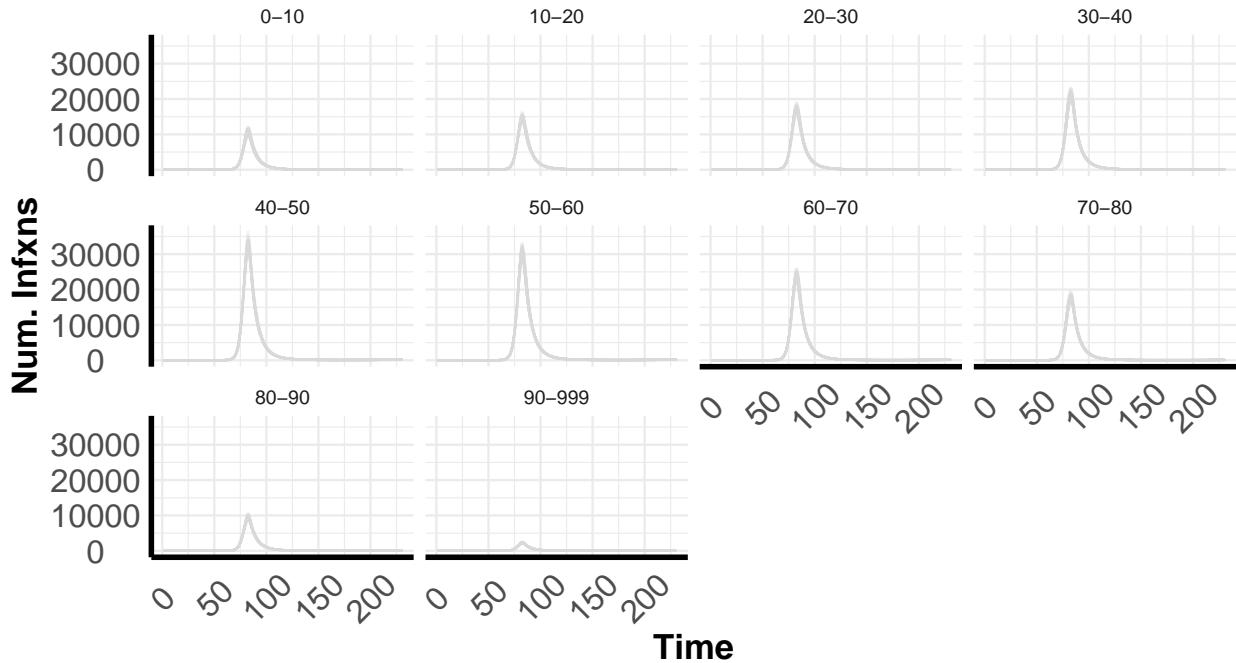
Serological Diagnostics



IFRs & Incidence Curve



Posterior Draws of the Infection Curve



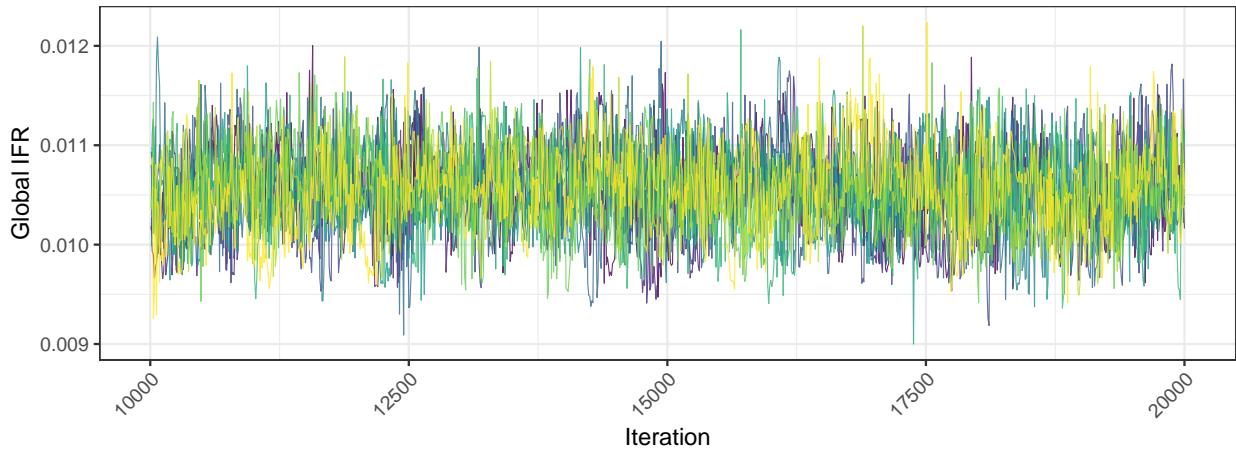
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-10	ma1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	9226.7180	0.6685	0.3191
10-20	ma2	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	9407.6611	2.5366	0.0160
20-30	ma3	0.0001	0.0001	0.0001	0.0001	0.0002	0.0003	8879.6742	0.4004	0.3682
30-40	ma4	0.0002	0.0002	0.0003	0.0003	0.0004	0.0005	6744.1259	0.7178	0.3083
40-50	ma5	0.0005	0.0006	0.0007	0.0007	0.0008	0.0009	5483.9044	2.2583	0.0311
50-60	ma6	0.0018	0.0020	0.0022	0.0022	0.0024	0.0027	3284.0851	1.6319	0.1053
60-70	ma7	0.0066	0.0072	0.0078	0.0078	0.0085	0.0092	2638.2612	2.5850	0.0141
70-80	ma8	0.0238	0.0256	0.0279	0.0279	0.0304	0.0336	2167.7135	1.5368	0.1225
80-90	ma9	0.0763	0.0833	0.0922	0.0923	0.1019	0.1115	1373.6806	1.4755	0.1343
90-999	ma10	0.1633	0.1776	0.1990	0.1995	0.2232	0.2534	901.3638	0.5386	0.3451

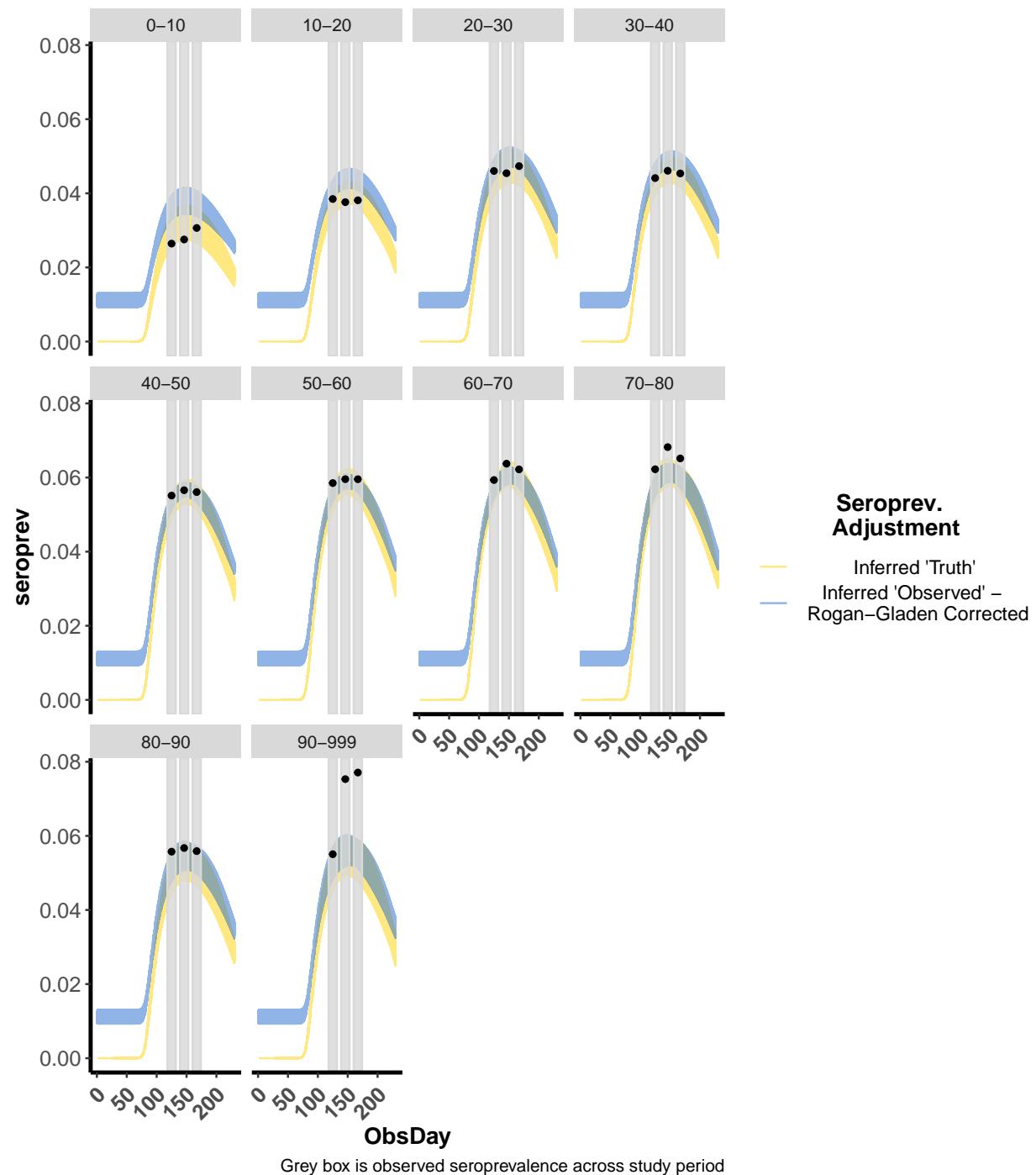
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0101	0.0109	0.0116	0.0116	0.0124	0.0132	3003.712	-0.0395	0.3986

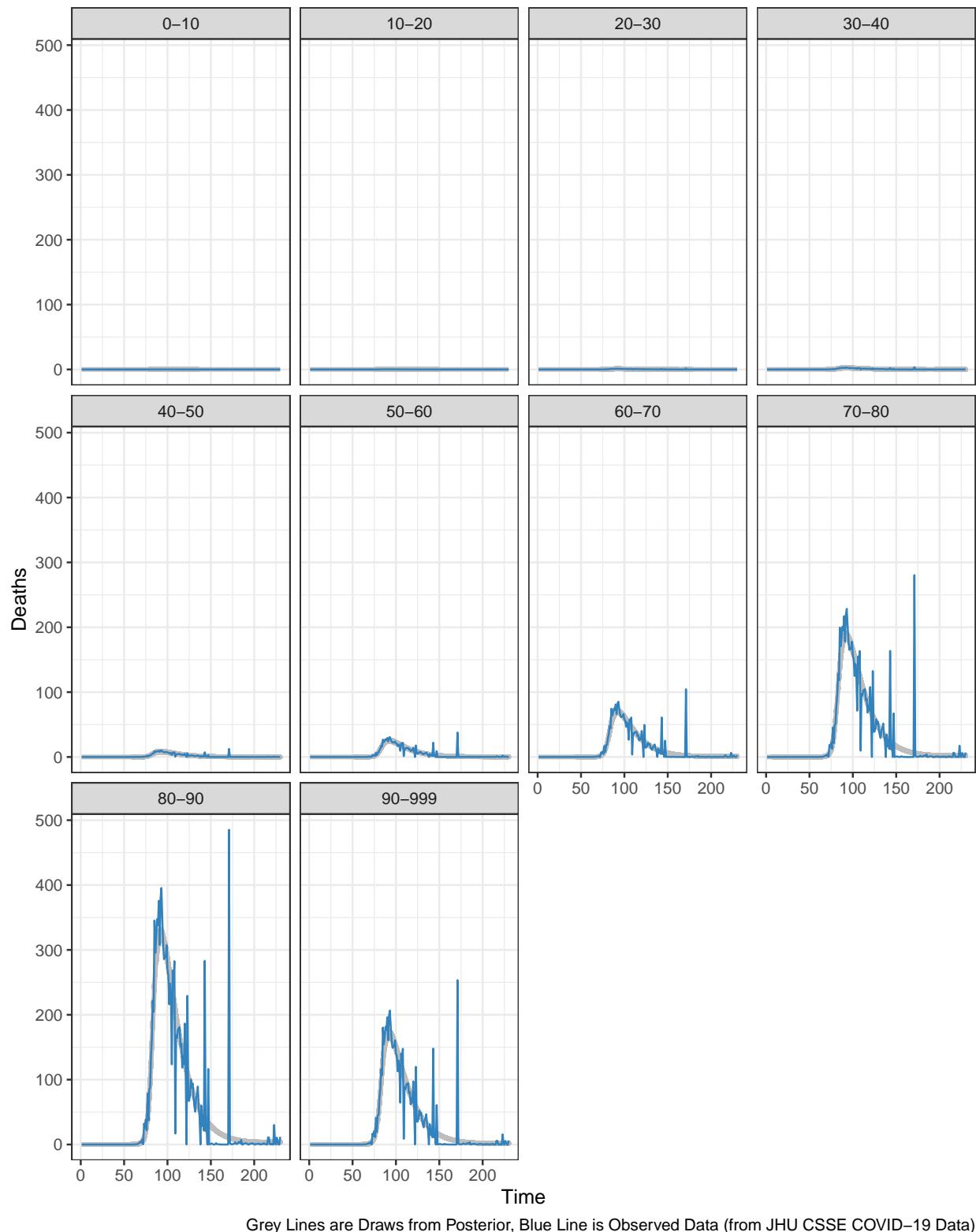
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0105	0.0109	0.0117	0.0117	0.0125	0.0131	213.2756	0.2591	0.3858
chain2	0.0106	0.0108	0.0116	0.0116	0.0122	0.0126	135.6381	-1.5087	0.1278
chain3	0.0104	0.0109	0.0116	0.0116	0.0124	0.0129	300.6024	0.5787	0.3374
chain4	0.0101	0.0109	0.0116	0.0116	0.0123	0.0130	273.6989	-0.5443	0.3440
chain5	0.0106	0.0110	0.0116	0.0116	0.0124	0.0130	195.2318	3.1017	0.0032
chain6	0.0101	0.0109	0.0116	0.0116	0.0124	0.0129	221.4971	-1.8650	0.0701
chain7	0.0105	0.0109	0.0116	0.0116	0.0124	0.0131	331.4153	0.0893	0.3974
chain8	0.0105	0.0108	0.0116	0.0116	0.0124	0.0127	159.9567	2.2143	0.0344
chain9	0.0105	0.0109	0.0116	0.0116	0.0124	0.0127	129.0605	2.0317	0.0506
chain10	0.0104	0.0108	0.0117	0.0116	0.0124	0.0132	149.1882	-4.1398	0.0001



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



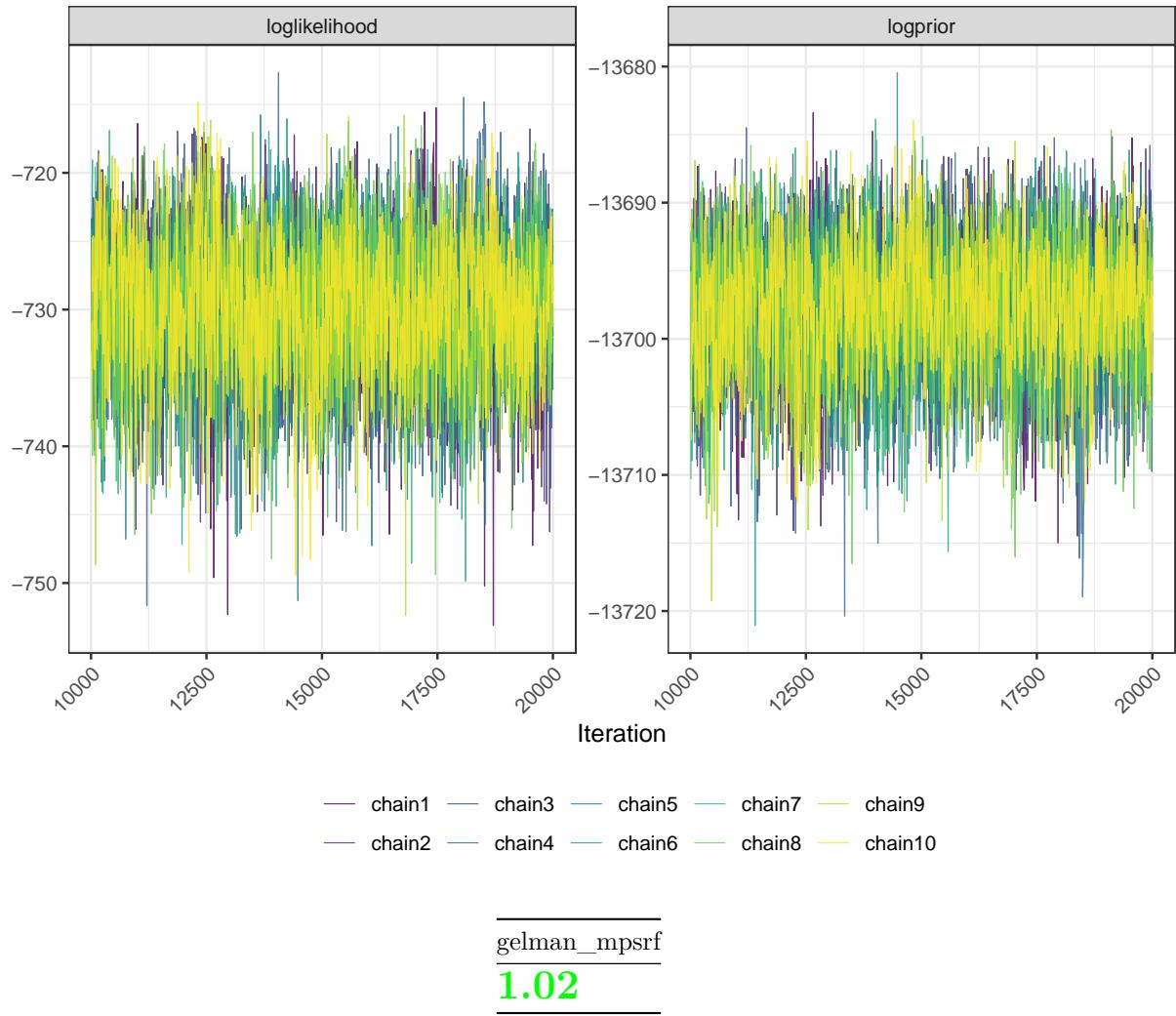
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.7130	53.0565	64.2062	63.5243	70.3589	73.8917	310.3161	-0.8776	0.2714
x2	80.2895	82.2995	83.8952	83.8601	85.1893	85.8534	365.9305	-0.2594	0.3857
x3	84.2931	85.4334	86.6761	86.7105	88.1776	90.8646	130.8443	0.3632	0.3735
x4	219.0013	219.2018	223.8787	224.5265	232.3699	232.9892	360.9804	0.7809	0.2941
y1	0.0001	0.0416	0.9134	1.0896	3.0326	5.3157	3918.0787	0.5616	0.3407
y2	0.0137	1.5015	6.7099	6.3686	9.0587	10.1211	288.5312	-0.0323	0.3987
y3	11.8444	11.9183	12.0352	12.0332	12.1376	12.2705	607.0291	-0.4288	0.3639
y4	11.1476	11.4921	11.6914	11.6874	11.8618	11.9621	137.6493	-0.5494	0.3430
y5	6.3579	6.6241	6.9026	6.9176	7.2811	7.5298	1110.4616	0.5278	0.3471
Ne1	0.5001	0.5615	0.6282	0.6285	0.6985	0.7478	7854.5020	0.4070	0.3672
Ne10	0.8458	0.9500	1.0438	1.0433	1.1325	1.2114	1121.8782	0.8522	0.2775
Ne2	0.6498	0.6978	0.7597	0.7599	0.8222	0.8878	7344.7067	-0.8933	0.2677
Ne3	0.7676	0.8406	0.9058	0.9062	0.9740	1.0395	8110.5296	-1.1911	0.1963
Ne4	0.7633	0.8156	0.8779	0.8784	0.9412	0.9959	7164.0362	1.9059	0.0649
Ne5	0.9613	0.9971	1.0567	1.0567	1.1169	1.1734	6664.4724	-0.2506	0.3866
Ne6	0.9963	1.0528	1.1127	1.1129	1.1736	1.2437	5807.4662	1.5541	0.1193
Ne7	1.0335	1.0837	1.1455	1.1457	1.2098	1.2766	5151.6834	0.0917	0.3973
Ne8	1.0356	1.0974	1.1658	1.1662	1.2344	1.3053	3293.0123	0.2545	0.3862
Ne9	0.8848	0.9515	1.0295	1.0301	1.1096	1.1692	1368.2534	-0.1223	0.3960

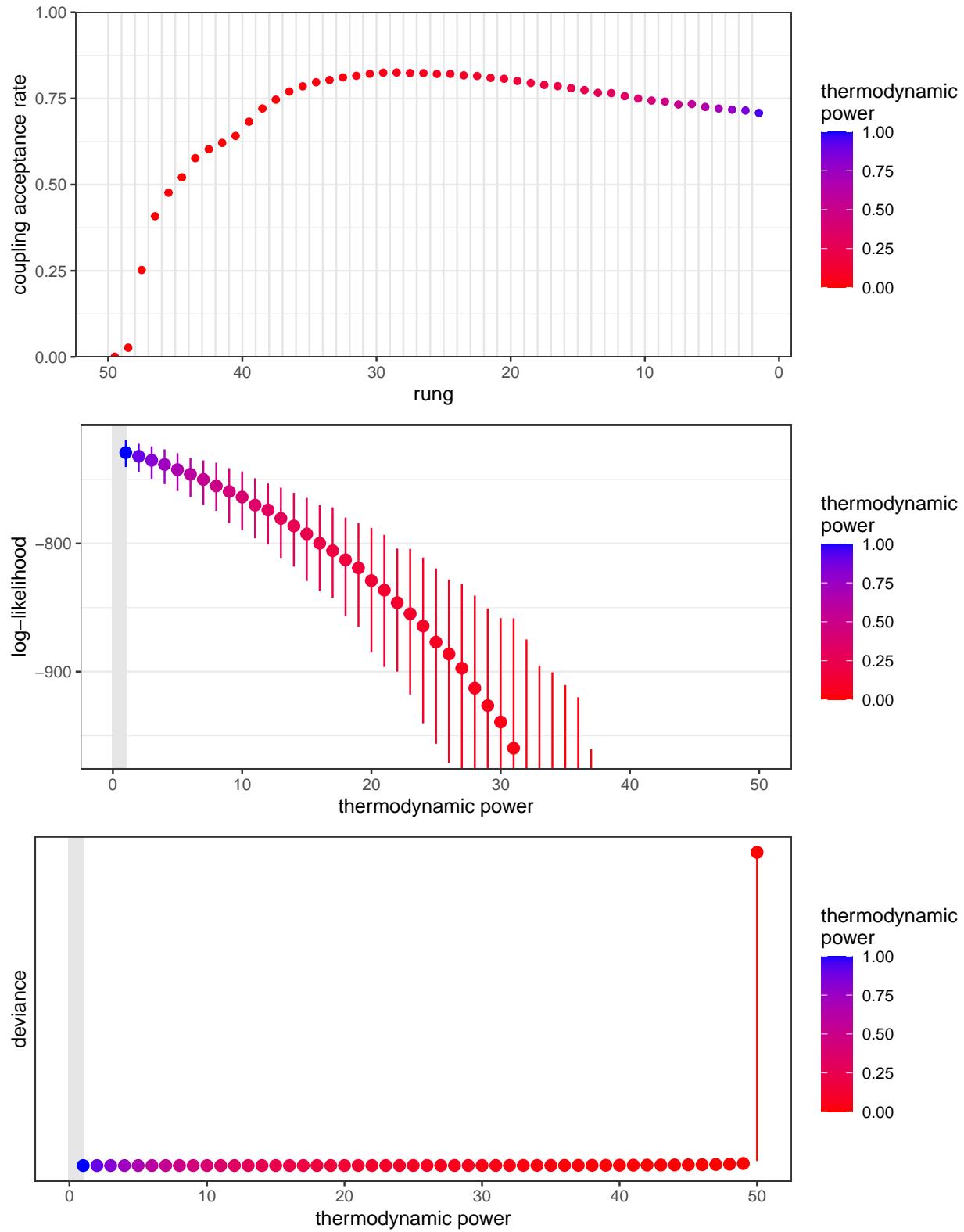
GBR3 with the Potential for Seroreversion Included

Fit Diagnostics

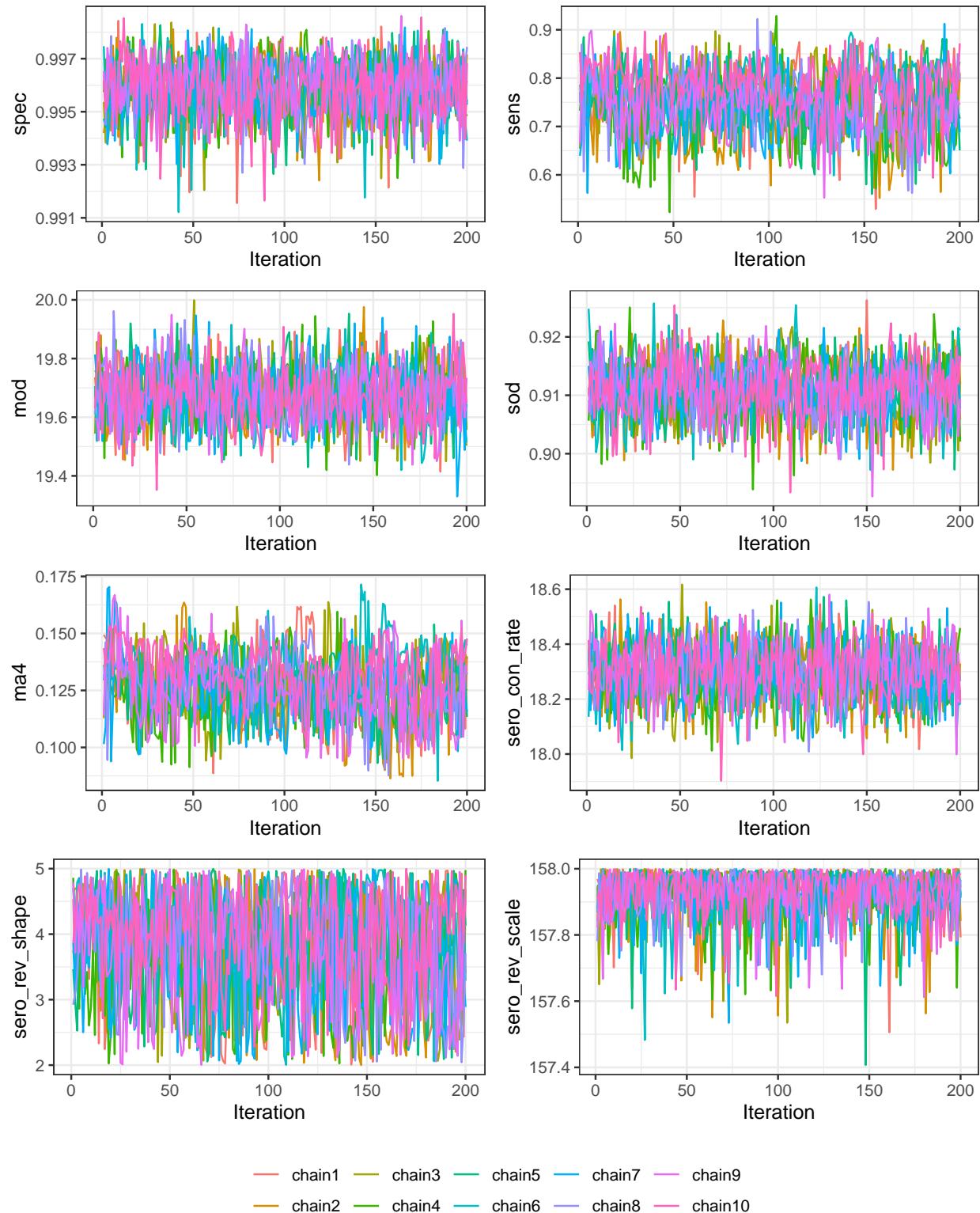
Log Likelihood & Prior Plot



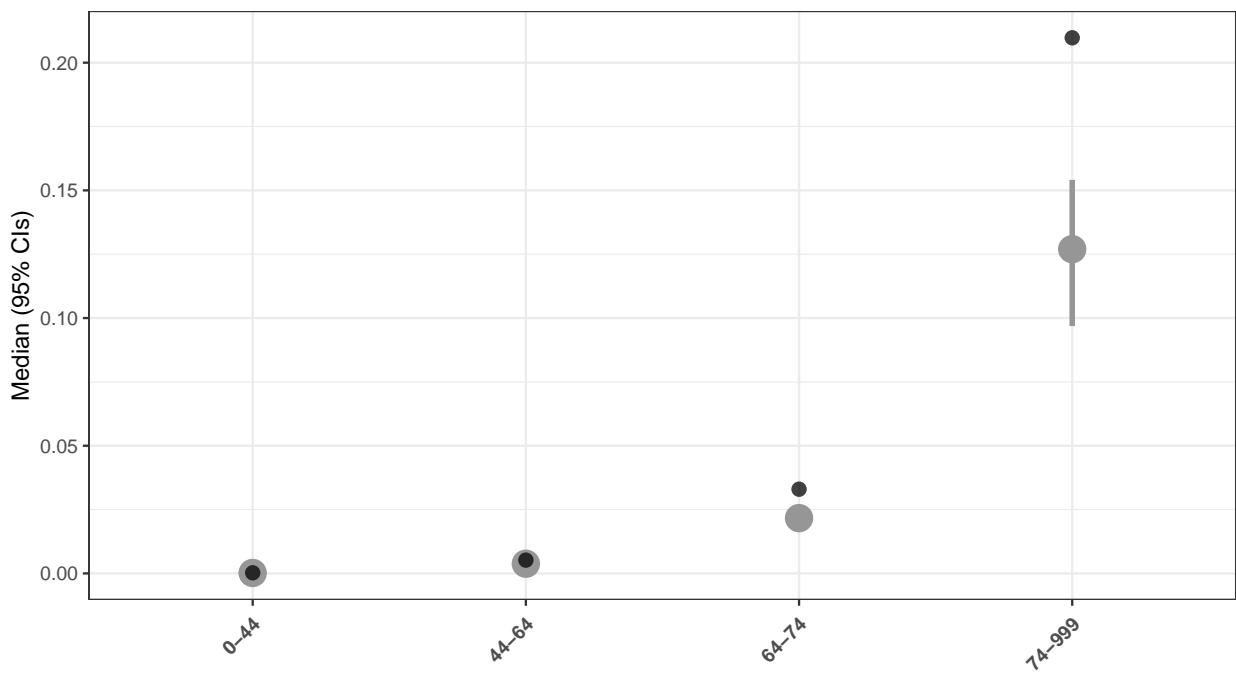
Metropolis Coupling Acceptance Plot



Serological Diagnostics

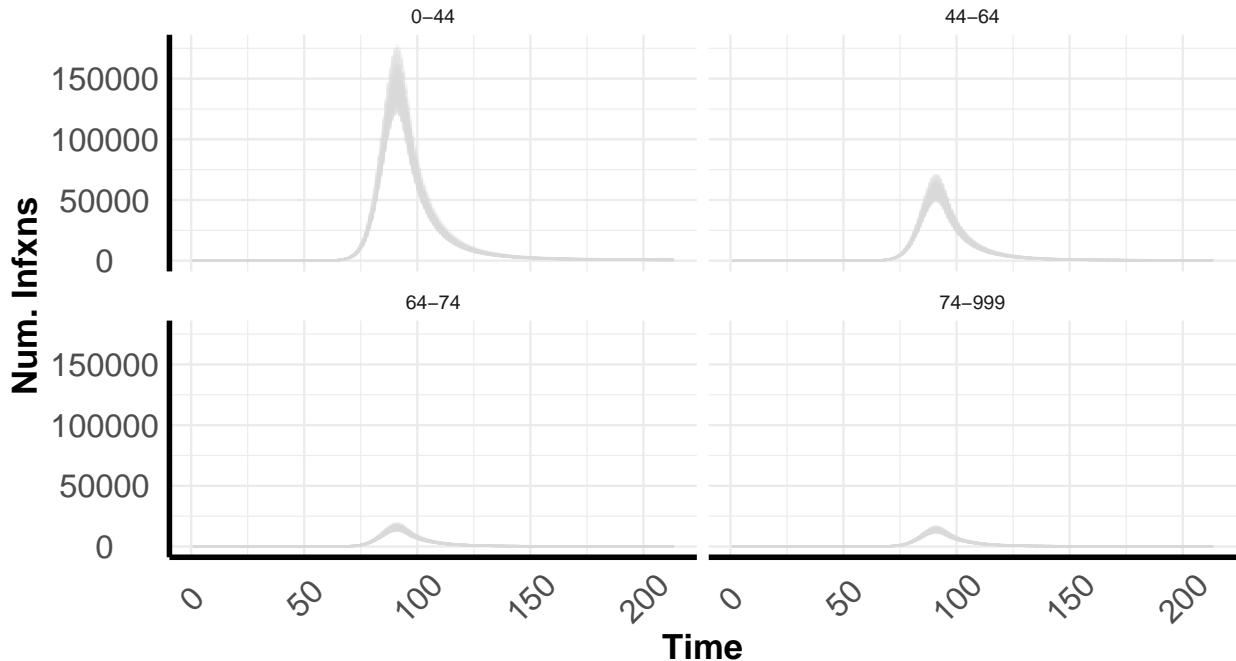


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



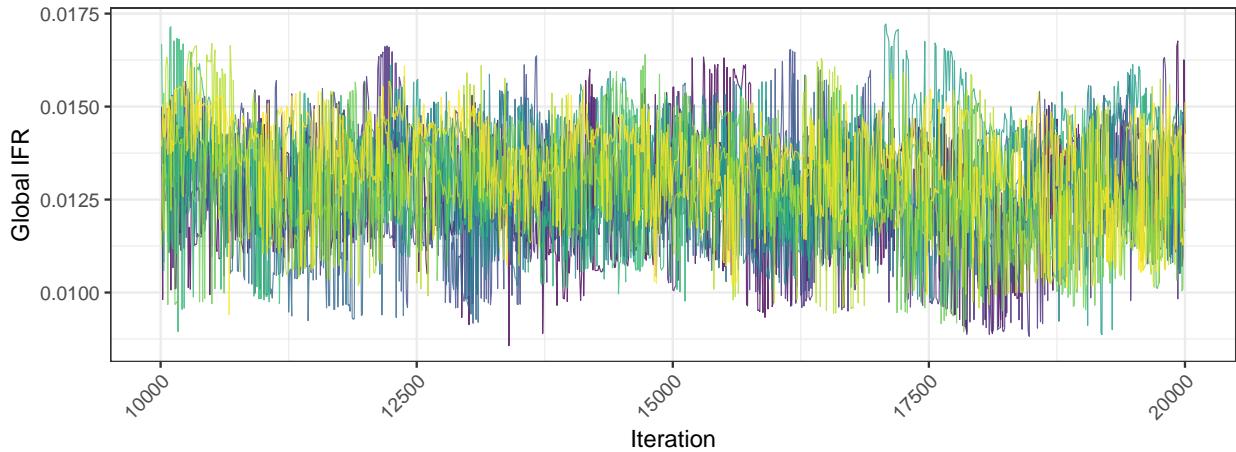
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-44	ma1	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	507.3427	-2.5324	0.0162
44-64	ma2	0.0025	0.0030	0.0038	0.0038	0.0046	0.0051	414.6232	-2.1747	0.0375
64-74	ma3	0.0142	0.0169	0.0217	0.0217	0.0263	0.0292	488.0211	-2.3147	0.0274
74-999	ma4	0.0831	0.0969	0.1270	0.1268	0.1541	0.1730	306.1081	-2.3083	0.0278

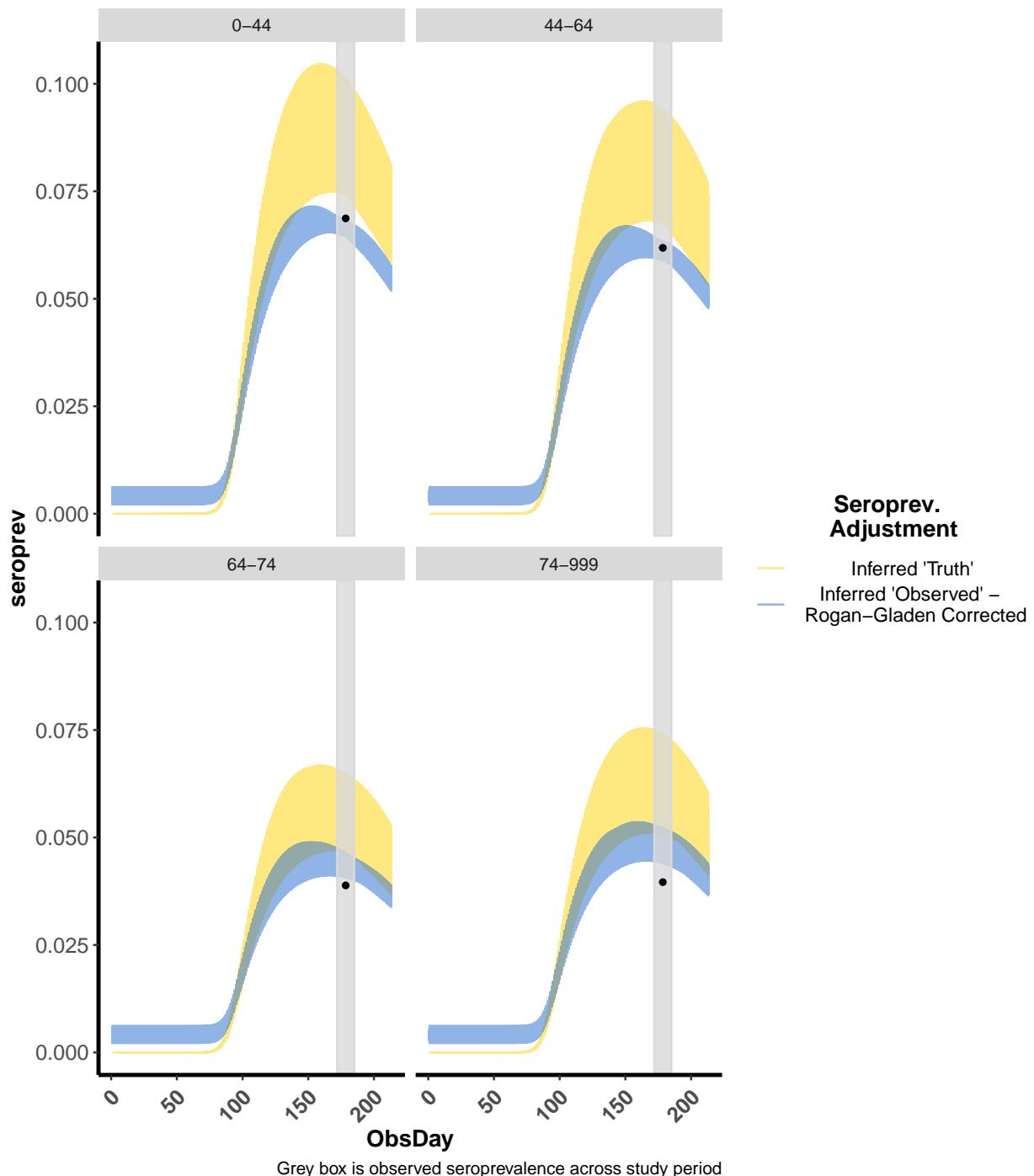
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0067	0.0078	0.01	0.01	0.0119	0.0131	1071.594	6.8675	0

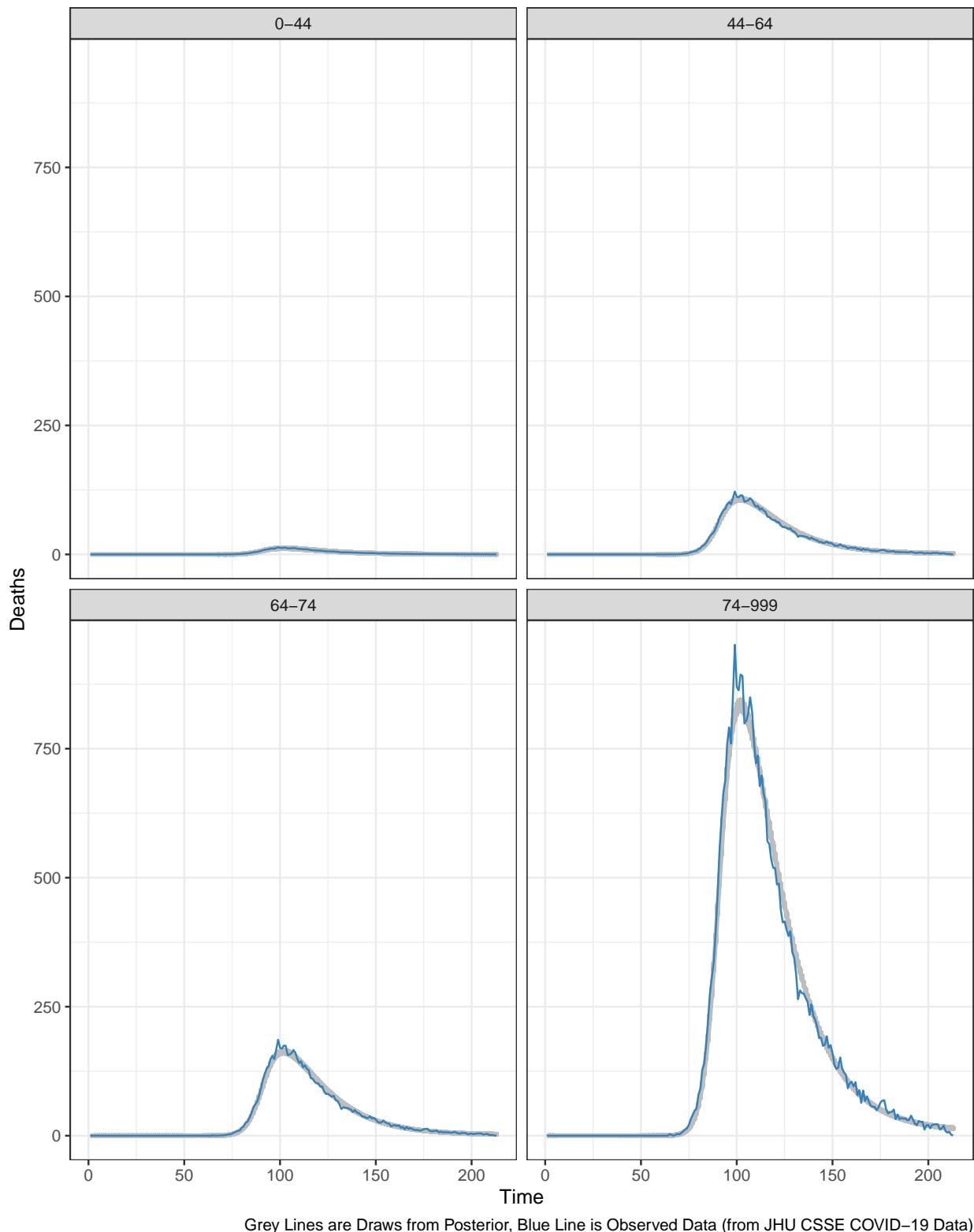
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0070	0.0076	0.0099	0.0098	0.0118	0.0126	121.0504	-1.4454	0.1404
chain2	0.0067	0.0074	0.0097	0.0098	0.0120	0.0129	61.5592	1.6406	0.1039
chain3	0.0074	0.0079	0.0099	0.0100	0.0119	0.0126	187.5226	2.4270	0.0210
chain4	0.0068	0.0074	0.0096	0.0096	0.0117	0.0123	132.7007	3.4335	0.0011
chain5	0.0074	0.0079	0.0100	0.0099	0.0118	0.0124	75.8472	4.5641	0.0000
chain6	0.0070	0.0087	0.0106	0.0105	0.0123	0.0131	44.9110	-0.3553	0.3745
chain7	0.0073	0.0081	0.0096	0.0098	0.0116	0.0124	143.0894	3.0968	0.0033
chain8	0.0071	0.0079	0.0100	0.0099	0.0115	0.0127	23.0966	1.5223	0.1252
chain9	0.0072	0.0080	0.0099	0.0099	0.0122	0.0129	78.1006	5.3431	0.0000
chain10	0.0076	0.0084	0.0107	0.0105	0.0119	0.0123	134.7121	5.5383	0.0000



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



Grey Lines are Draws from Posterior, Blue Line is Observed Data (from JHU CSSE COVID-19 Data)

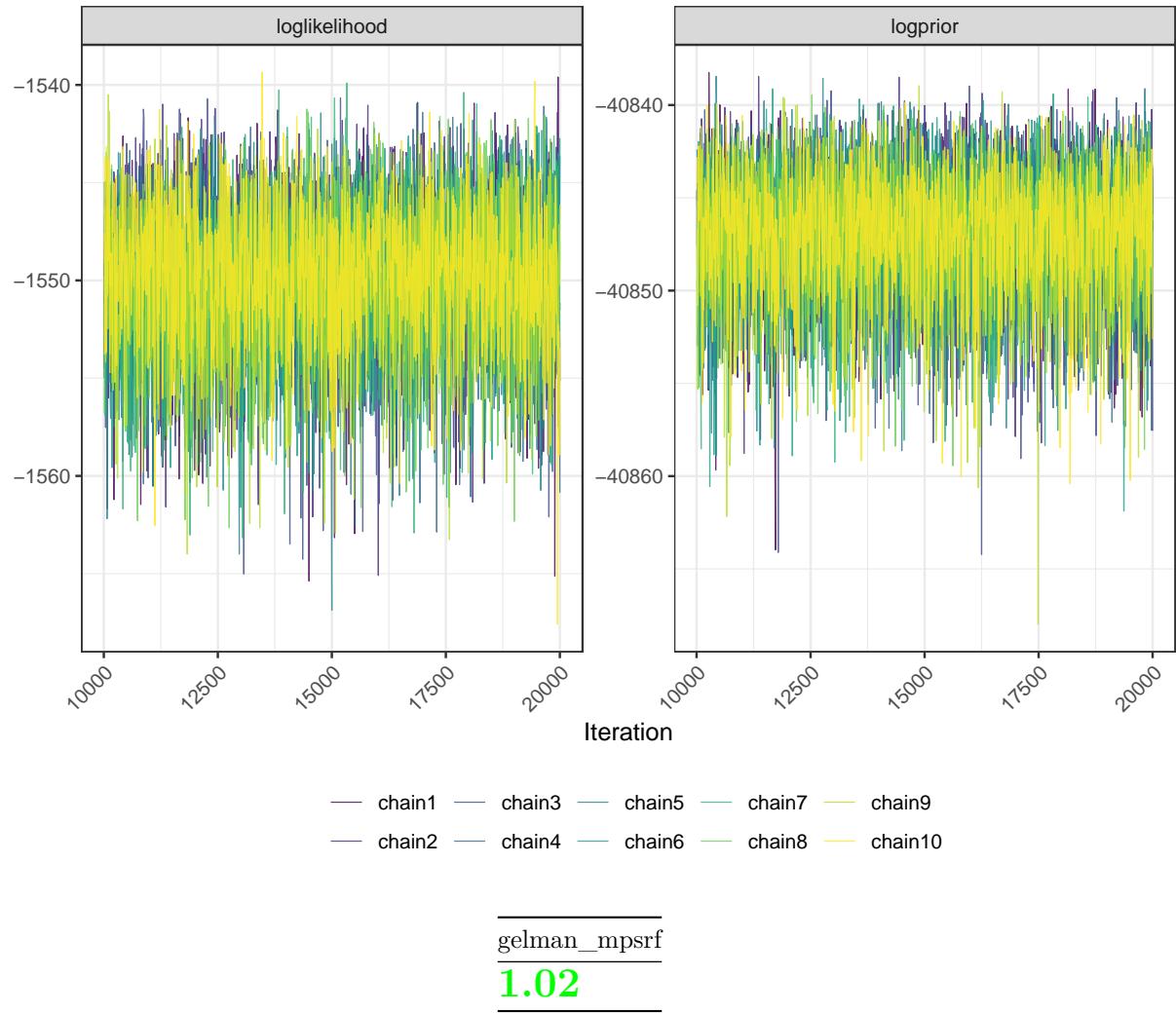
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.2937	3.3655	49.4129	45.7754	60.0222	67.4478	371.8398	5.7041	0.0000
x2	89.2964	91.0466	93.3019	93.2076	94.7680	95.8664	638.6250	2.1816	0.0369
x3	94.5856	95.7908	97.3443	97.4173	99.3831	102.1430	305.4117	-4.6227	0.0000
x4	206.0007	206.0687	207.8325	208.3073	212.5205	212.9942	238.5541	0.1787	0.3926
y1	0.0003	0.0593	1.2839	1.5025	4.1487	5.6050	1925.1842	-2.8831	0.0063
y2	0.0009	0.0791	2.0369	2.2237	5.4469	7.7375	303.6117	2.4139	0.0217
y3	11.9588	12.0811	12.2745	12.2812	12.5231	12.7028	453.8258	2.1105	0.0430
y4	11.4196	11.6239	11.9015	11.9045	12.2083	12.3309	338.4795	3.9935	0.0001
y5	6.4871	6.7602	7.0580	7.0613	7.3695	7.6320	856.3328	1.7976	0.0793
Ne1	1.0589	1.1213	1.1886	1.1885	1.2571	1.3296	2425.4288	-0.8895	0.2686
Ne2	0.9661	1.0233	1.0864	1.0870	1.1522	1.2035	2403.7268	-1.7713	0.0831
Ne3	0.6476	0.6962	0.7580	0.7585	0.8251	0.8883	2062.5744	-1.8841	0.0676
Ne4	0.6872	0.7658	0.8403	0.8413	0.9198	0.9951	595.2340	0.9767	0.2476

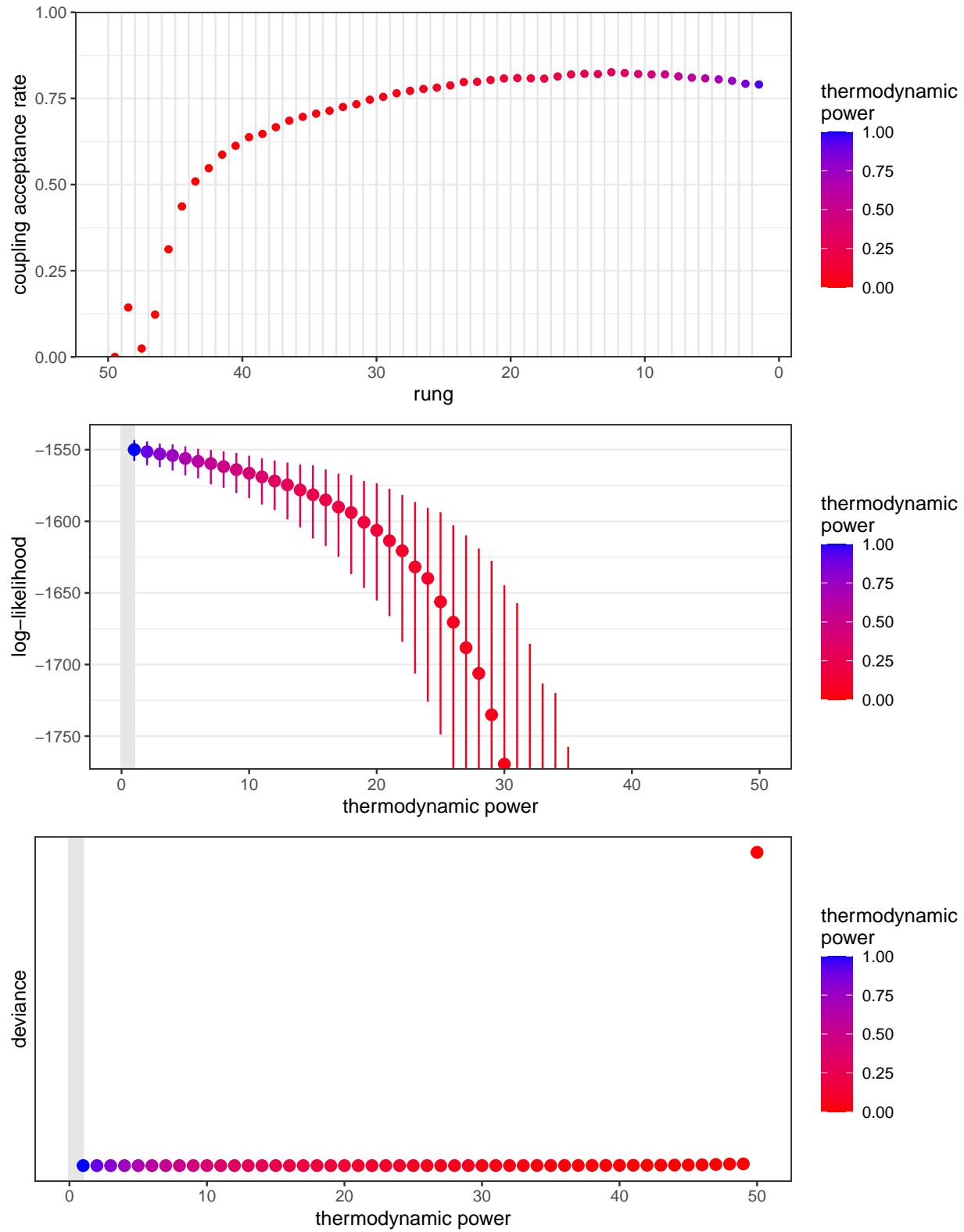
ITA1 with the Potential for Seroreversion Included

Fit Diagnostics

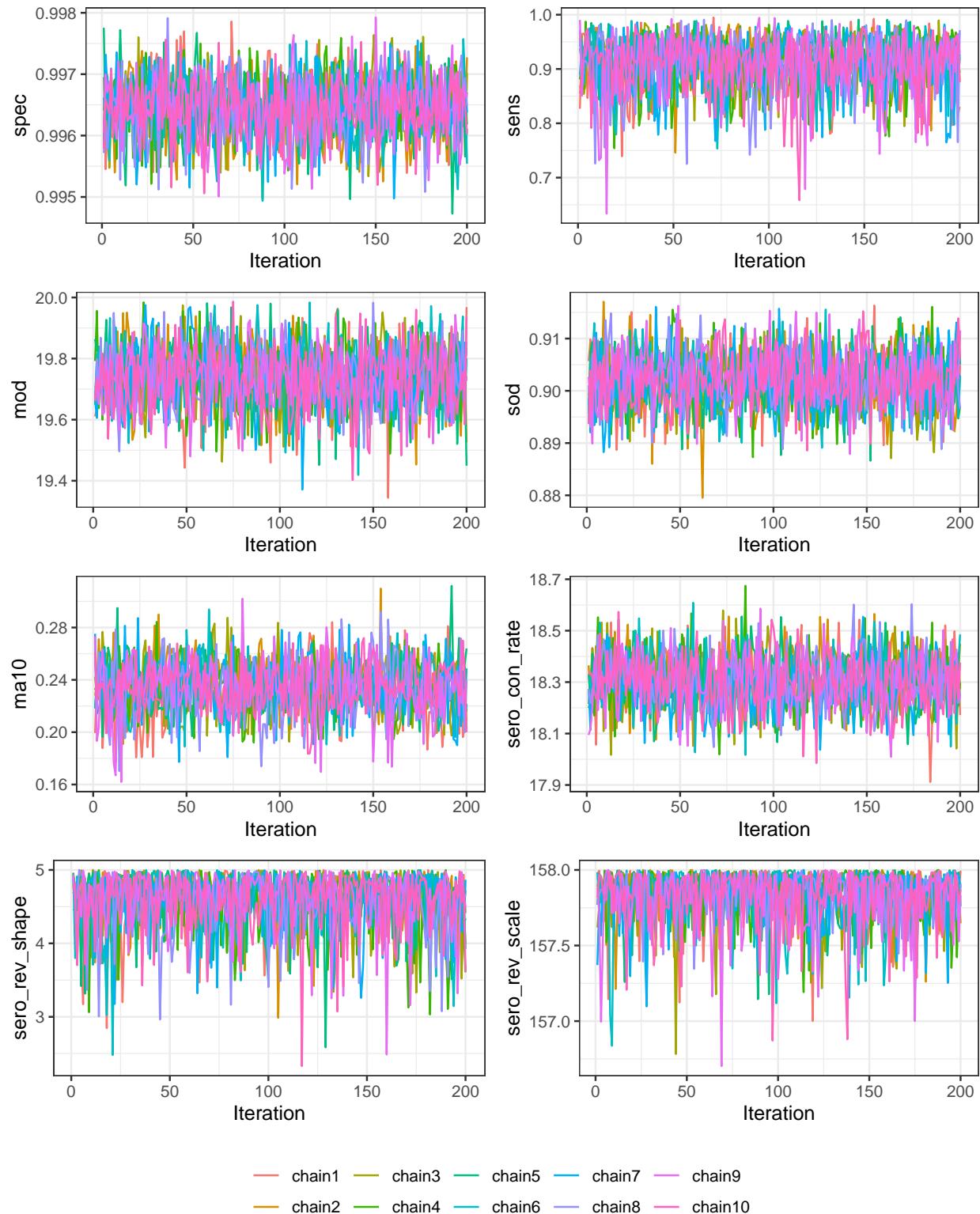
Log Likelihood & Prior Plot



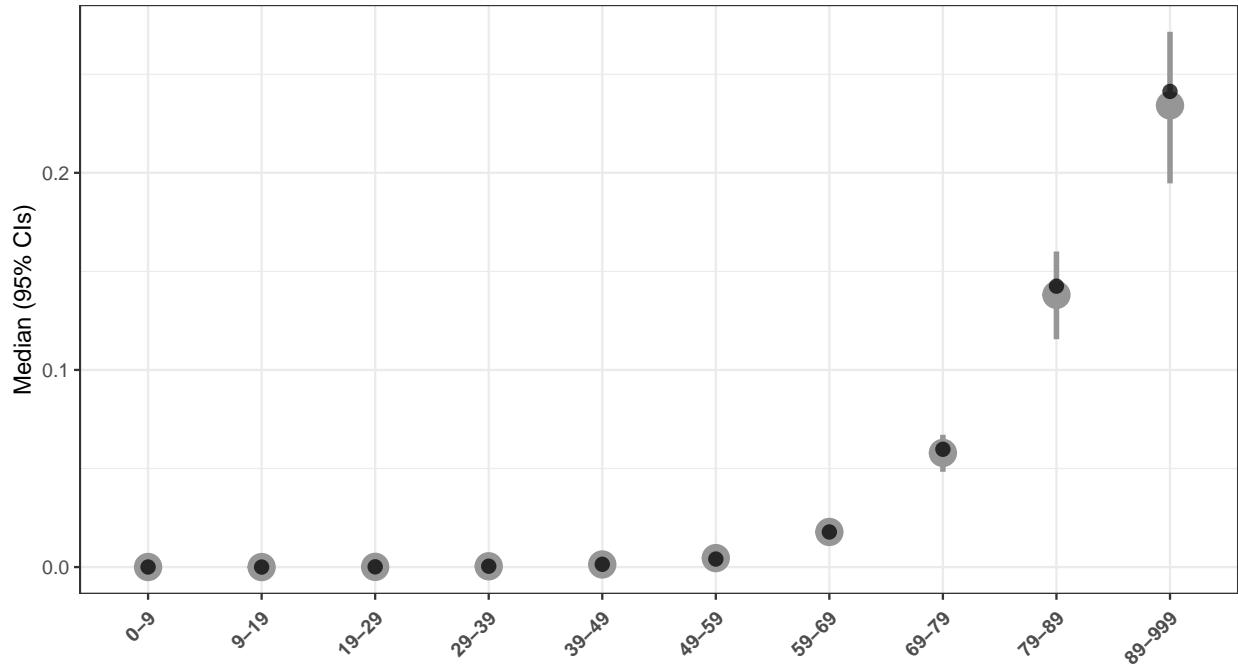
Metropolis Coupling Acceptance Plot



Serological Diagnostics

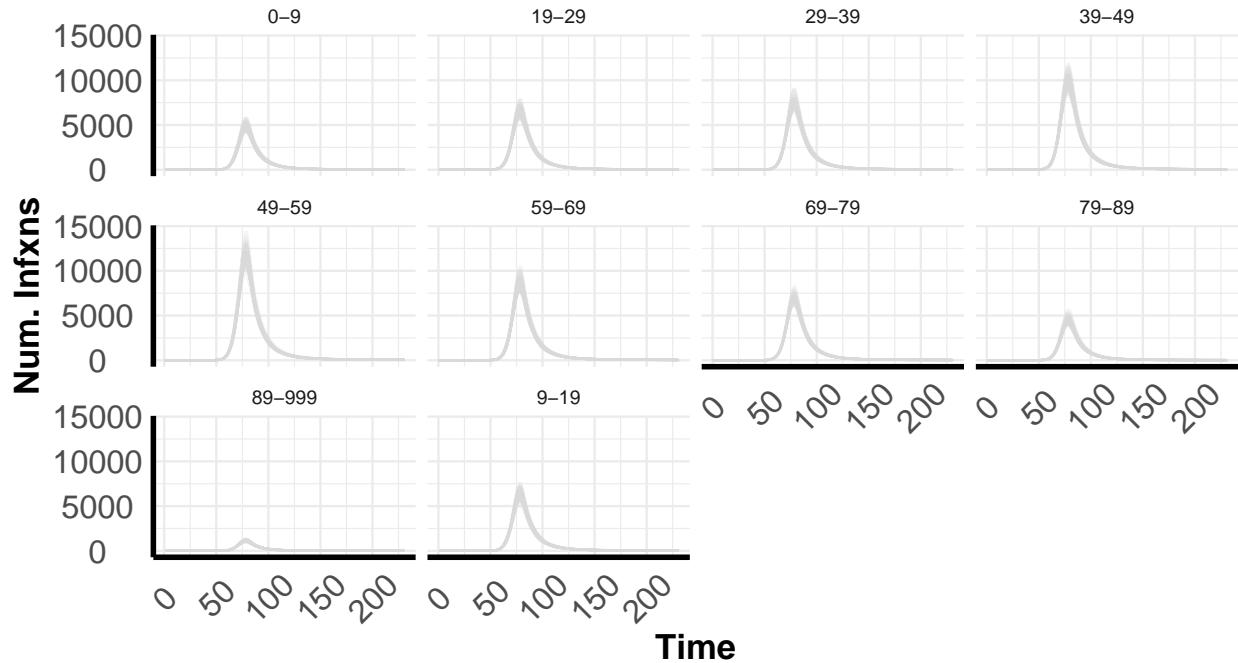


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



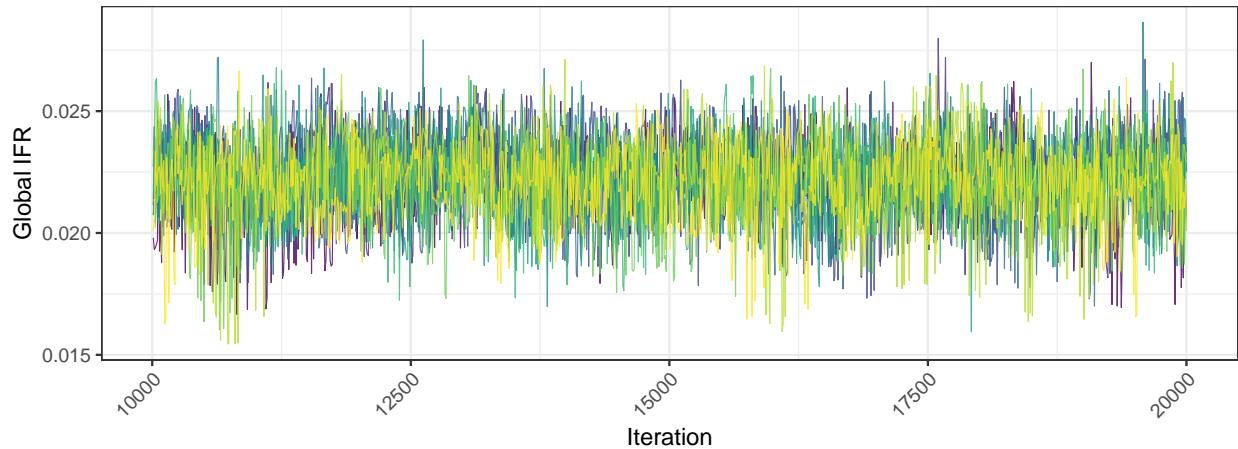
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-9	ma1	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	9709.962	-0.0518	0.3984
9-19	ma2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	9026.583	-2.4408	0.0203
19-29	ma3	0.0000	0.0001	0.0001	0.0001	0.0002	0.0002	10634.227	-1.2311	0.1870
29-39	ma4	0.0002	0.0003	0.0004	0.0004	0.0005	0.0006	4872.642	-1.5546	0.1192
39-49	ma5	0.0008	0.0011	0.0013	0.0013	0.0016	0.0019	3299.601	-1.5825	0.1141
49-59	ma6	0.0030	0.0038	0.0046	0.0045	0.0053	0.0064	2808.289	-0.3214	0.3789
59-69	ma7	0.0113	0.0149	0.0178	0.0178	0.0207	0.0237	2222.623	-1.3420	0.1621
69-79	ma8	0.0378	0.0483	0.0579	0.0579	0.0671	0.0751	2364.465	-1.7513	0.0861
79-89	ma9	0.0915	0.1156	0.1381	0.1380	0.1601	0.1801	1728.497	-0.3701	0.3725
89-999	ma10	0.1589	0.1946	0.2342	0.2340	0.2715	0.3119	1963.654	-1.3575	0.1588

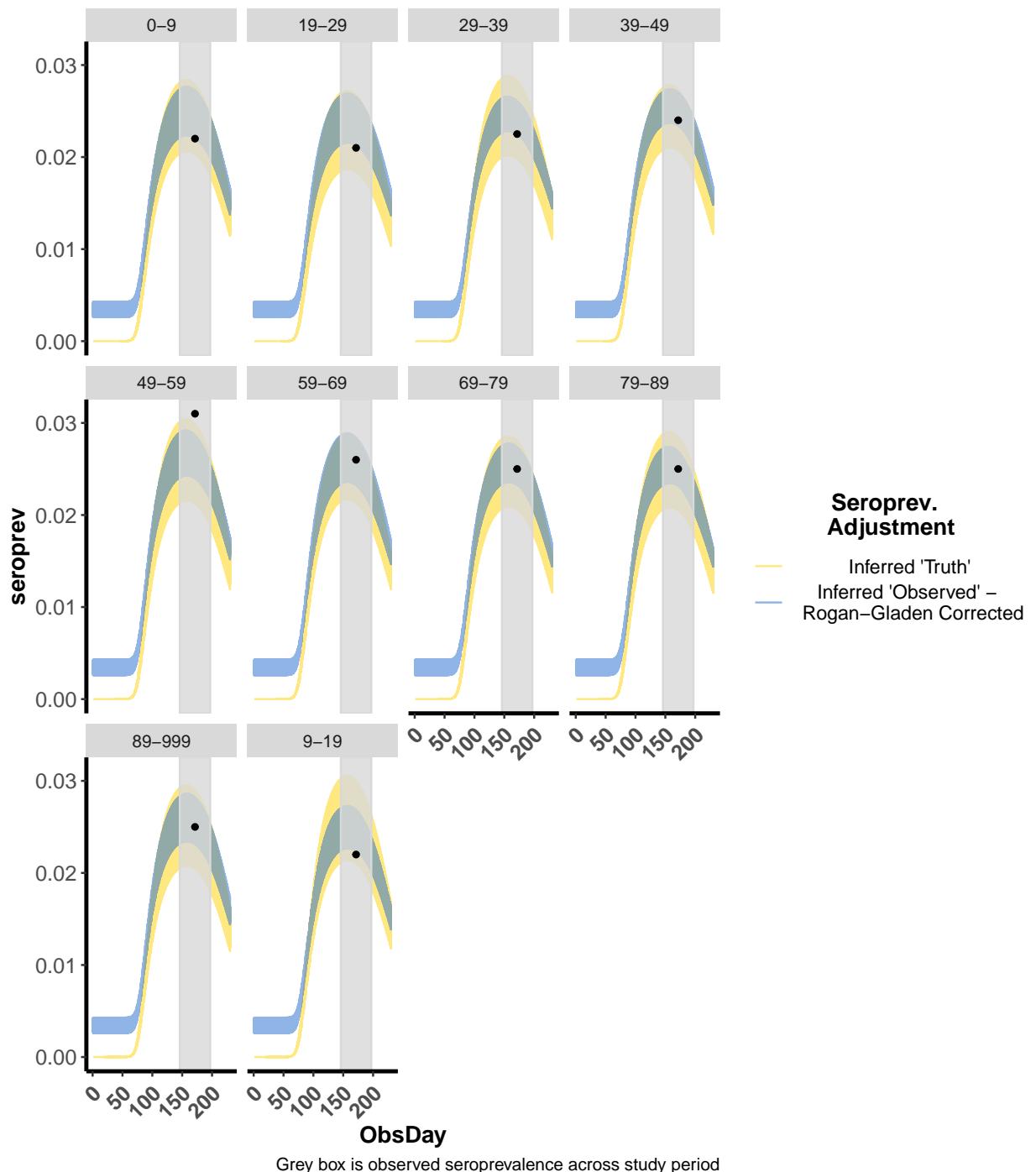
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0152	0.0188	0.0223	0.0222	0.025	0.0284	3403.833	-0.7802	0.2943

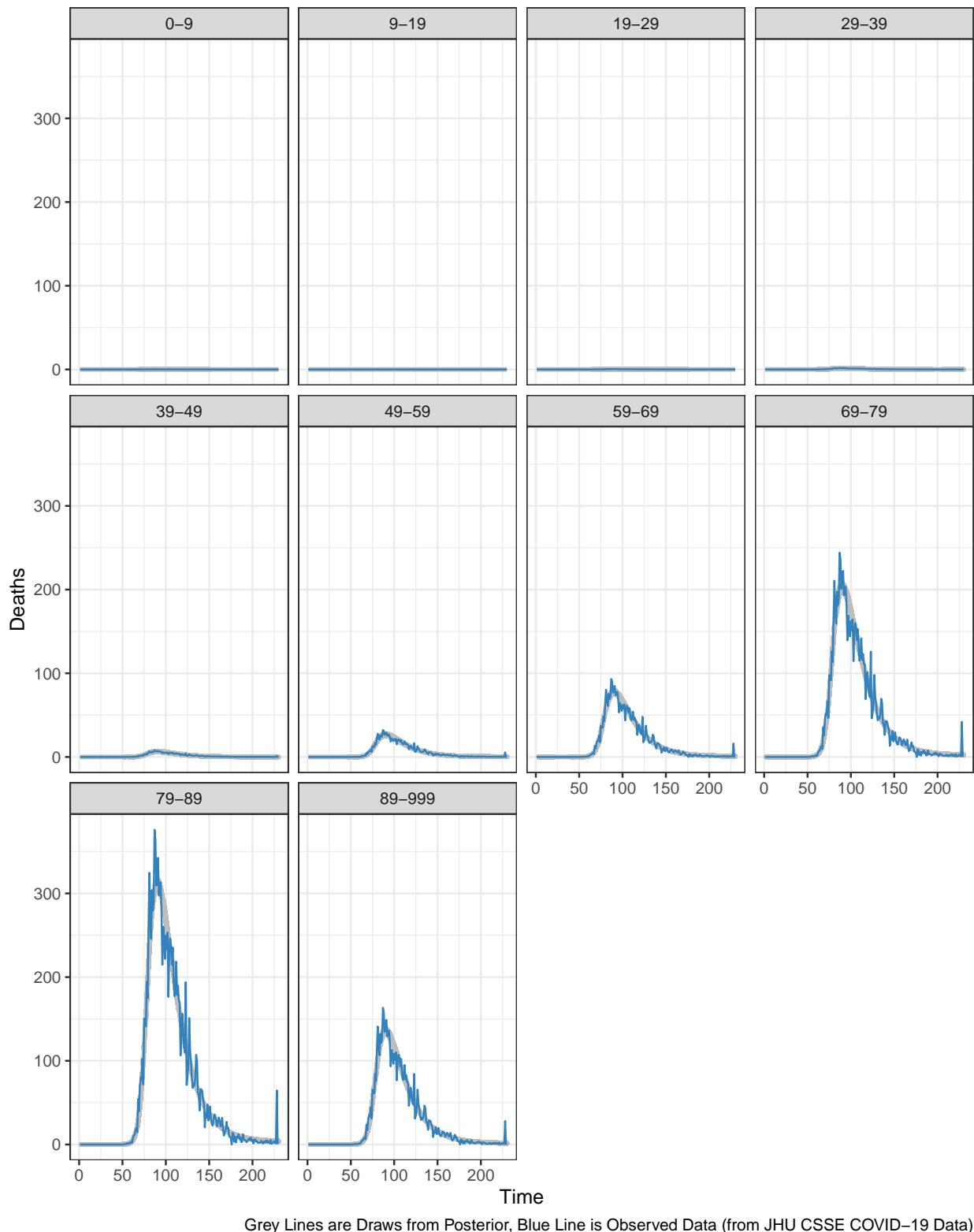
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0168	0.0183	0.0221	0.0220	0.0249	0.0265	300.3445	-3.6200	0.0006
chain2	0.0181	0.0197	0.0226	0.0225	0.0249	0.0280	474.3129	-1.2167	0.1903
chain3	0.0169	0.0187	0.0223	0.0222	0.0252	0.0280	262.0951	0.0923	0.3972
chain4	0.0170	0.0189	0.0223	0.0223	0.0251	0.0265	166.9567	2.1820	0.0369
chain5	0.0167	0.0193	0.0224	0.0224	0.0251	0.0284	283.3030	1.0873	0.2209
chain6	0.0156	0.0191	0.0222	0.0222	0.0248	0.0267	205.3538	-1.3739	0.1552
chain7	0.0175	0.0189	0.0221	0.0221	0.0251	0.0266	614.0136	2.4121	0.0218
chain8	0.0163	0.0183	0.0223	0.0221	0.0249	0.0268	712.6278	-1.3389	0.1628
chain9	0.0152	0.0176	0.0225	0.0223	0.0252	0.0266	157.0792	-1.1664	0.2021
chain10	0.0166	0.0187	0.0222	0.0221	0.0248	0.0264	549.1747	-0.0676	0.3980



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



Grey Lines are Draws from Posterior, Blue Line is Observed Data (from JHU CSSE COVID-19 Data)

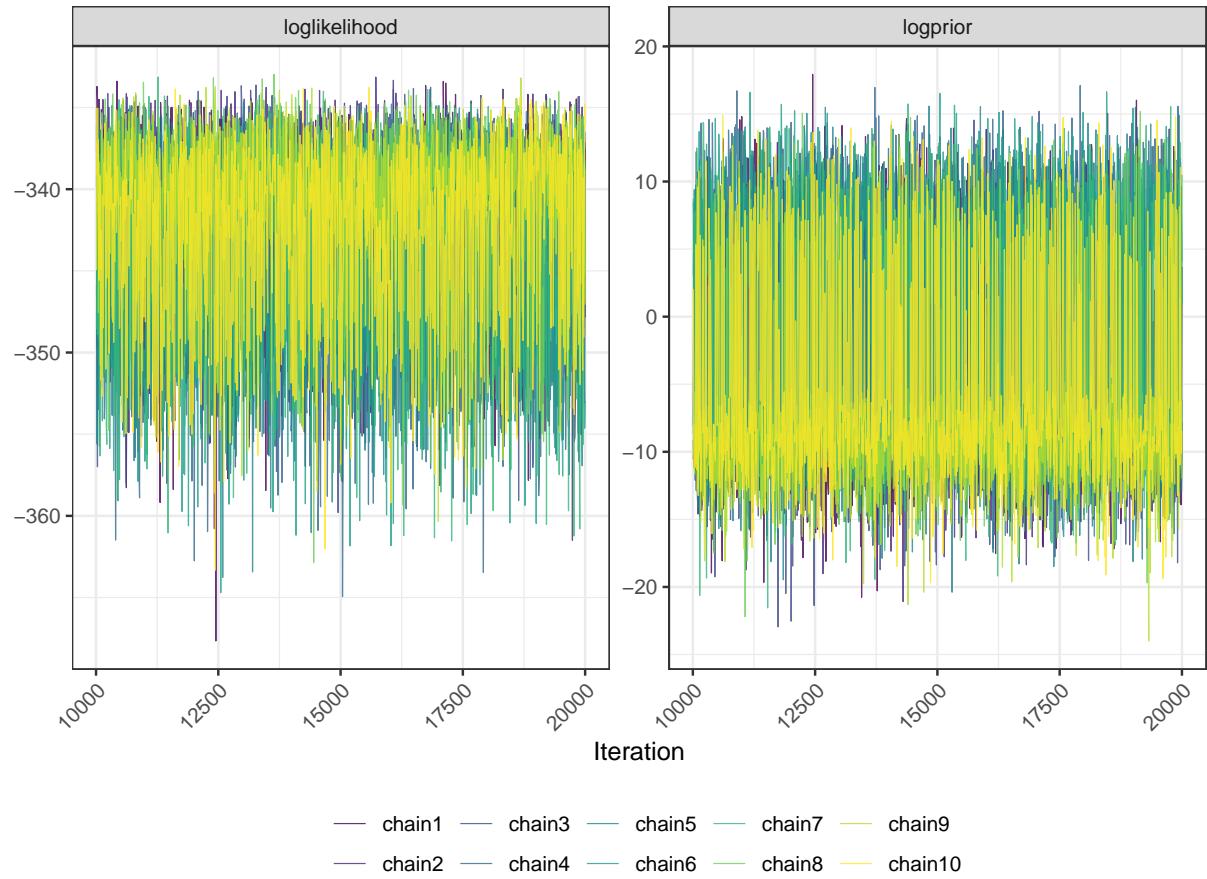
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.0736	1.7951	33.0496	25.5650	44.3358	55.9389	580.2183	2.4566	0.0195
x2	66.5563	69.9933	77.1648	76.7024	80.6519	82.3476	872.5455	-0.3273	0.3781
x3	83.0608	84.2634	87.6985	87.8659	92.4474	96.1737	721.8199	-0.6384	0.3254
x4	196.1821	201.3611	205.1005	204.7216	205.9672	205.9998	2714.4131	0.9101	0.2637
y1	0.0000	0.0591	1.2767	1.4551	3.8844	4.9205	1376.2063	0.9394	0.2566
y2	0.0000	0.0329	0.7805	1.0283	3.2676	6.8014	1229.3400	1.1566	0.2044
y3	9.8393	10.4769	11.0736	11.0288	11.2518	11.4481	2037.8381	-0.7578	0.2994
y4	9.7311	10.0801	10.4889	10.4778	10.8360	11.0446	640.2793	0.9332	0.2581
y5	5.6236	5.7970	5.9836	5.9862	6.1947	6.4441	2775.4439	0.6793	0.3167
Ne1	0.8201	0.8906	0.9840	0.9841	1.0779	1.1719	9587.7698	0.1302	0.3956
Ne10	0.8432	0.9144	1.0019	1.0027	1.0923	1.1905	2115.4470	1.1001	0.2178
Ne2	0.7980	0.8928	0.9858	0.9855	1.0786	1.1681	9333.1371	-0.6387	0.3253
Ne3	0.7914	0.8740	0.9626	0.9628	1.0528	1.1656	9241.6271	1.1015	0.2175
Ne4	0.8065	0.8872	0.9754	0.9751	1.0627	1.1285	9083.5809	-1.2260	0.1882
Ne5	0.8321	0.9051	0.9923	0.9917	1.0787	1.1733	8090.7897	2.5553	0.0152
Ne6	0.9230	0.9934	1.0770	1.0769	1.1609	1.2366	6973.4774	-1.2501	0.1826
Ne7	0.8388	0.9239	1.0115	1.0117	1.0998	1.1934	5380.2431	0.1613	0.3938
Ne8	0.8503	0.9165	1.0038	1.0041	1.0912	1.1872	3526.4786	1.4778	0.1339
Ne9	0.8329	0.9166	1.0041	1.0040	1.0926	1.1914	2696.8295	-1.5959	0.1117

KEN1 with the Potential for Seroreversion Included

Fit Diagnostics

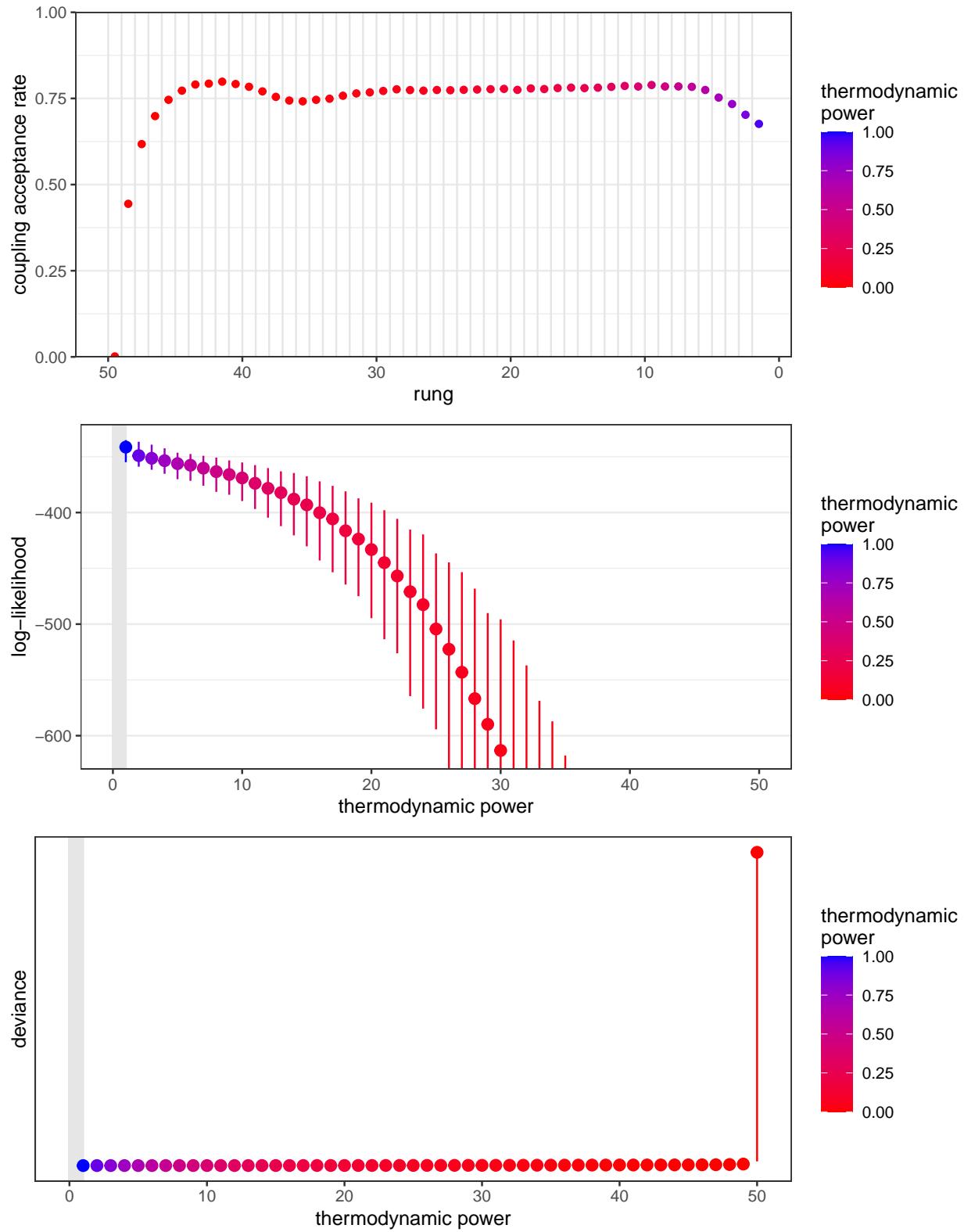
Log Likelihood & Prior Plot



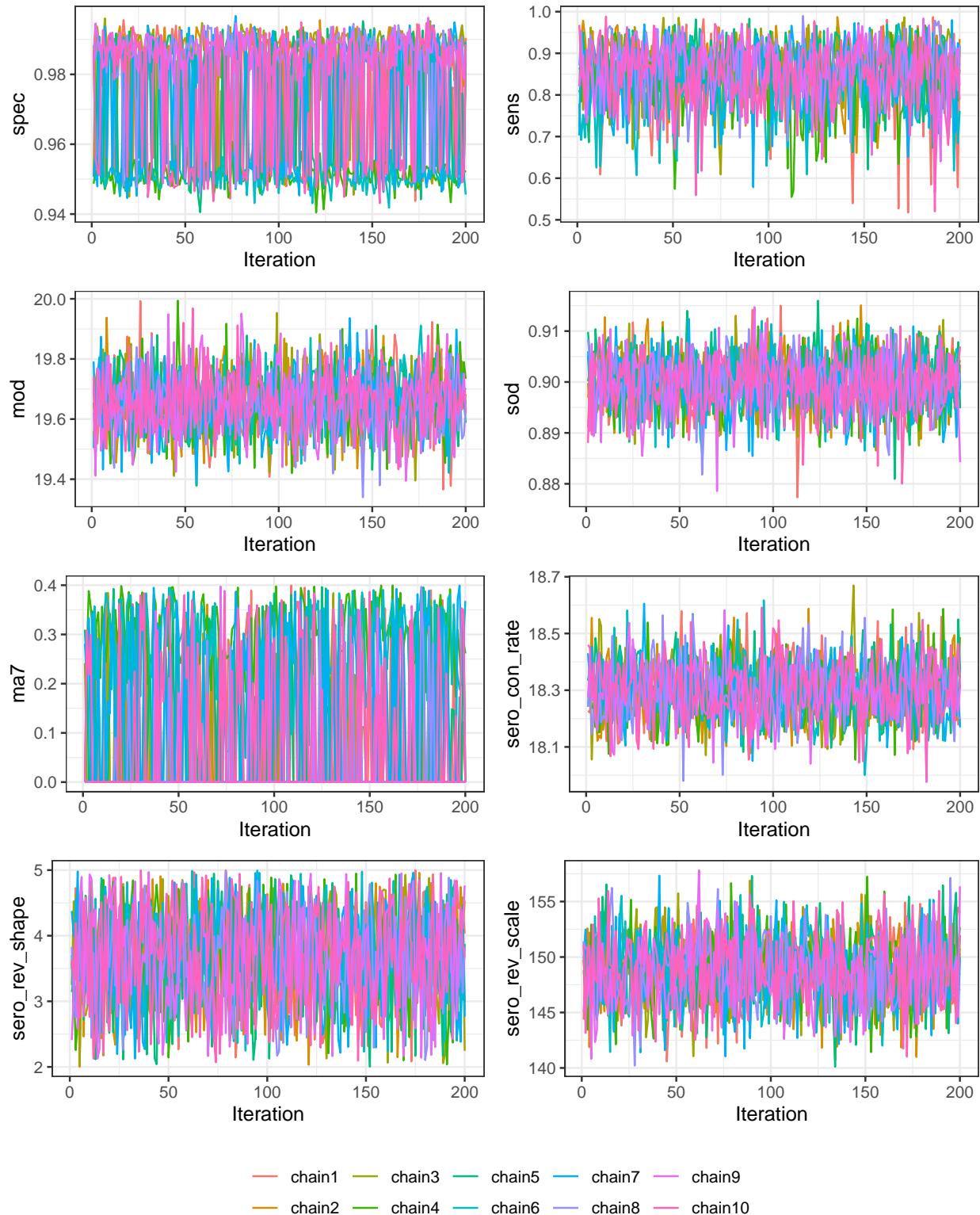
gelman_mpsrf

1

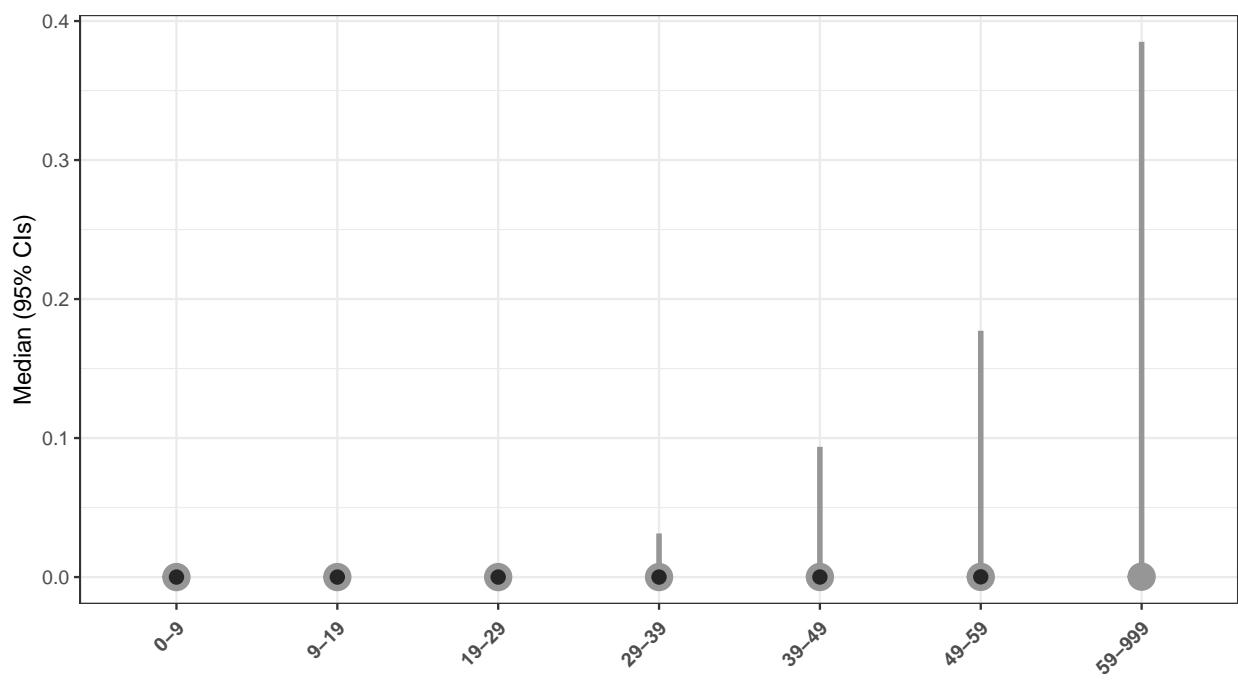
Metropolis Coupling Acceptance Plot



Serological Diagnostics

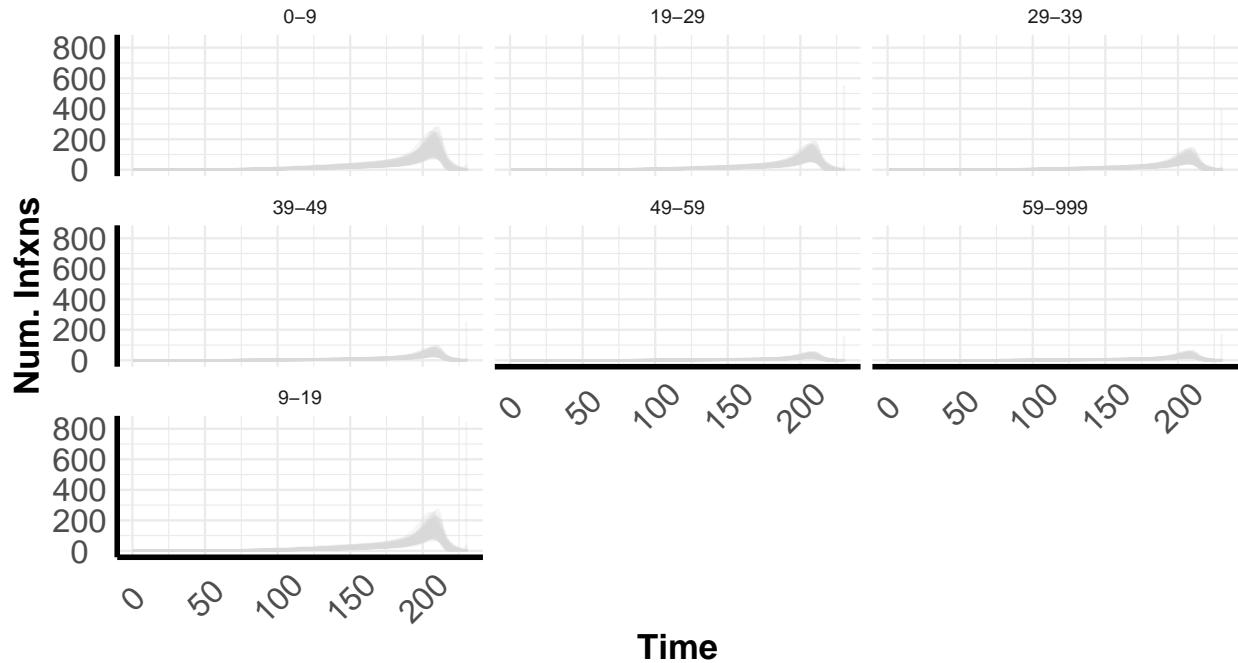


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



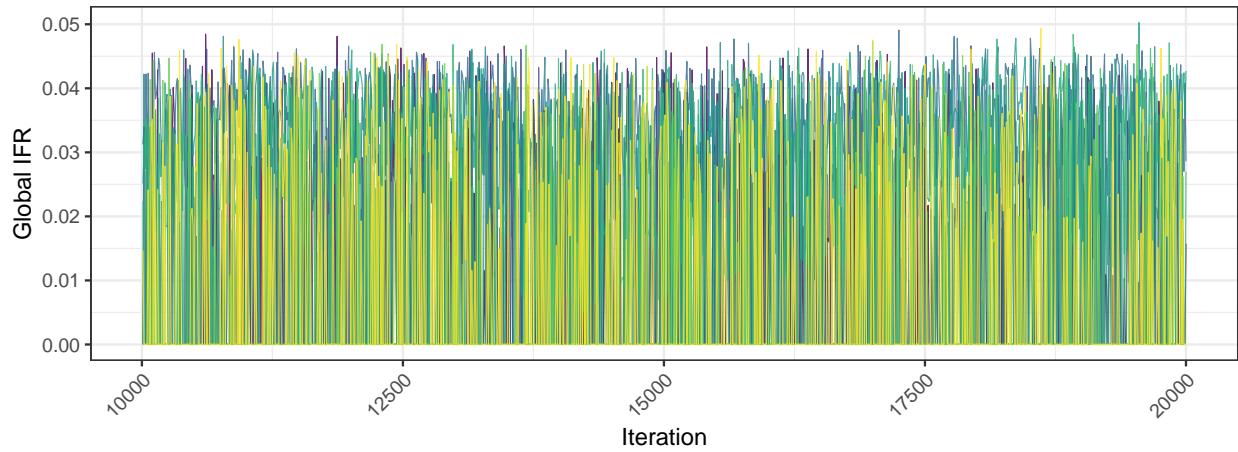
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-9	ma1	0e+00	0e+00	0e+00	0.0004	0.0021	0.0039	60.9082	0.2257	0.3889
9-19	ma2	0e+00	0e+00	0e+00	0.0004	0.0023	0.0051	56.5947	0.0524	0.3984
19-29	ma3	0e+00	0e+00	0e+00	0.0006	0.0031	0.0066	60.7629	0.1936	0.3915
29-39	ma4	0e+00	0e+00	0e+00	0.0080	0.0314	0.0480	37.6176	0.0872	0.3974
39-49	ma5	0e+00	0e+00	1e-04	0.0244	0.0937	0.1330	36.7750	0.1036	0.3968
49-59	ma6	0e+00	1e-04	1e-04	0.0468	0.1772	0.2292	35.9588	0.0641	0.3981
59-999	ma7	1e-04	2e-04	3e-04	0.1066	0.3851	0.3999	33.6470	0.1104	0.3965

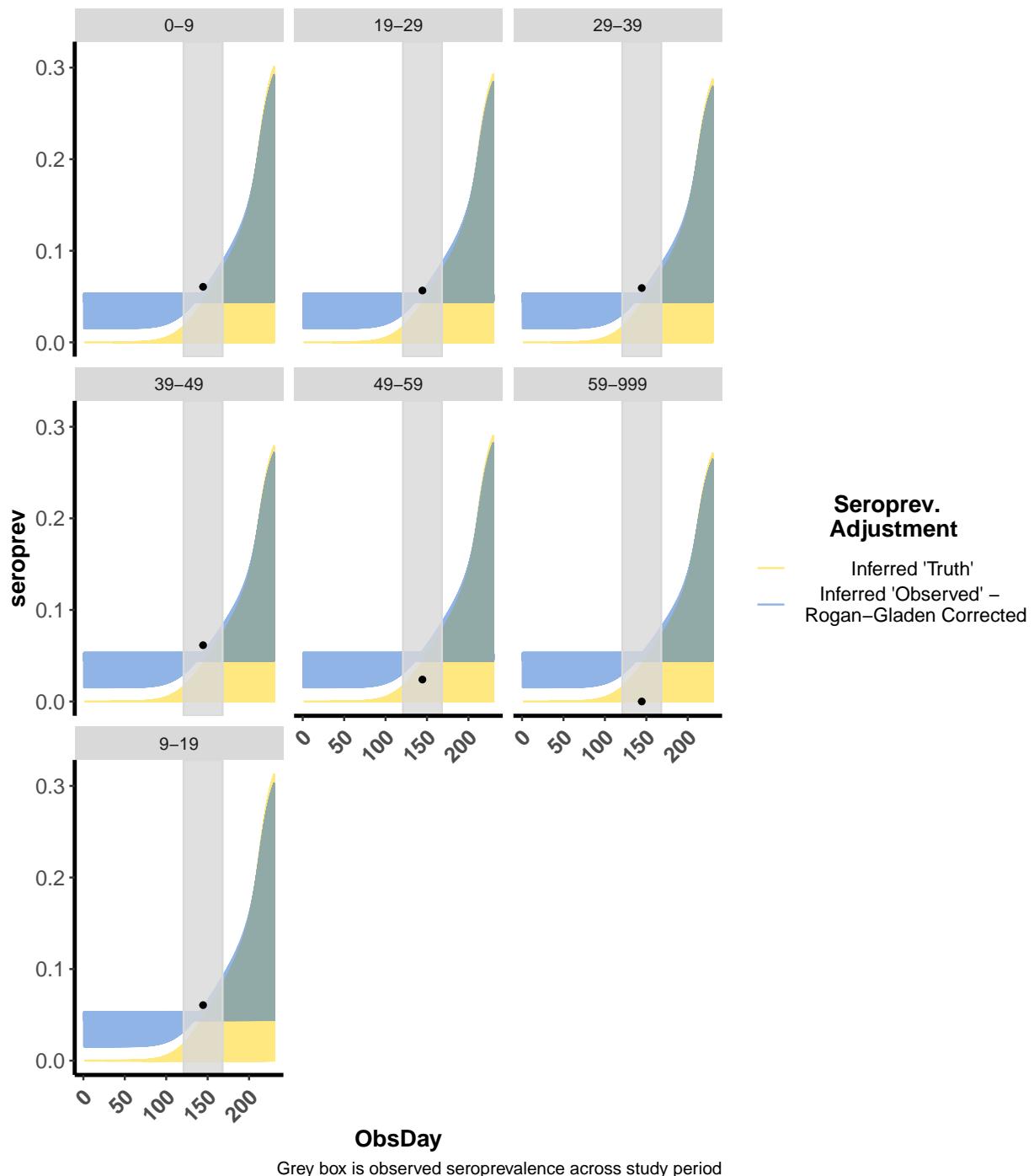
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0	0	0	0.012	0.0437	0.051	9927.807	-0.0748	0.3978

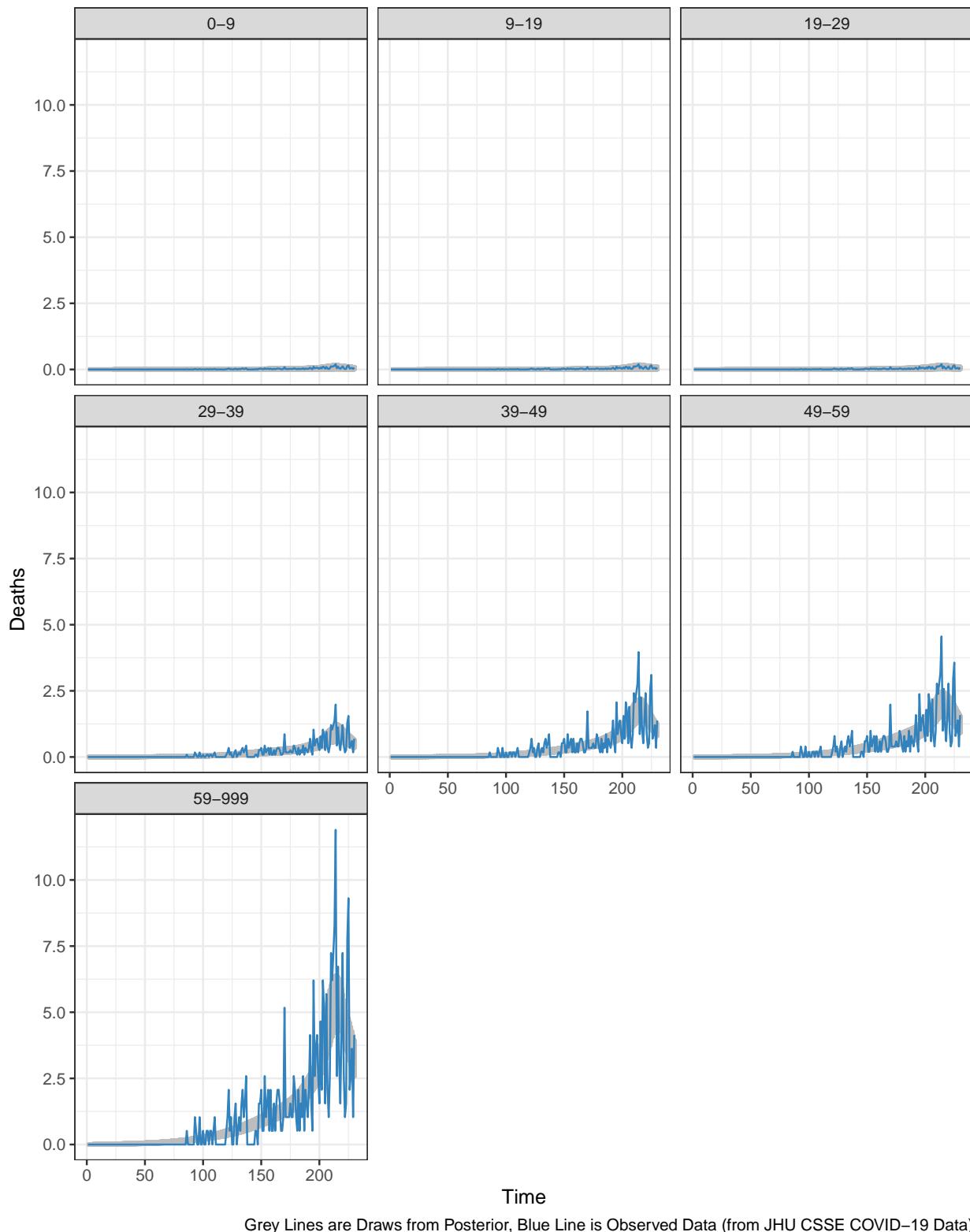
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0000	0.0000	0.0000	0.0119	0.0438	0.0476	1000.0000	-1.3787	0.1542
chain2	0.0000	0.0000	0.0000	0.0018	0.0305	0.0466	1000.0000	-0.6777	0.3171
chain3	0.0000	0.0000	0.0000	0.0044	0.0417	0.0470	1000.0000	-0.8464	0.2788
chain4	0.0132	0.0163	0.0328	0.0322	0.0459	0.0508	211.2510	1.4695	0.1355
chain5	0.0000	0.0000	0.0000	0.0109	0.0436	0.0489	911.5425	0.4406	0.3620
chain6	0.0046	0.0076	0.0305	0.0292	0.0446	0.0510	70.2476	-0.3302	0.3778
chain7	0.0000	0.0000	0.0000	0.0130	0.0438	0.0497	1000.0000	0.1115	0.3965
chain8	0.0000	0.0000	0.0000	0.0040	0.0395	0.0482	1000.0000	-0.1261	0.3958
chain9	0.0000	0.0000	0.0000	0.0010	0.0207	0.0495	1000.0000	-0.1323	0.3955
chain10	0.0000	0.0000	0.0000	0.0110	0.0437	0.0491	1000.0000	0.7066	0.3108



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



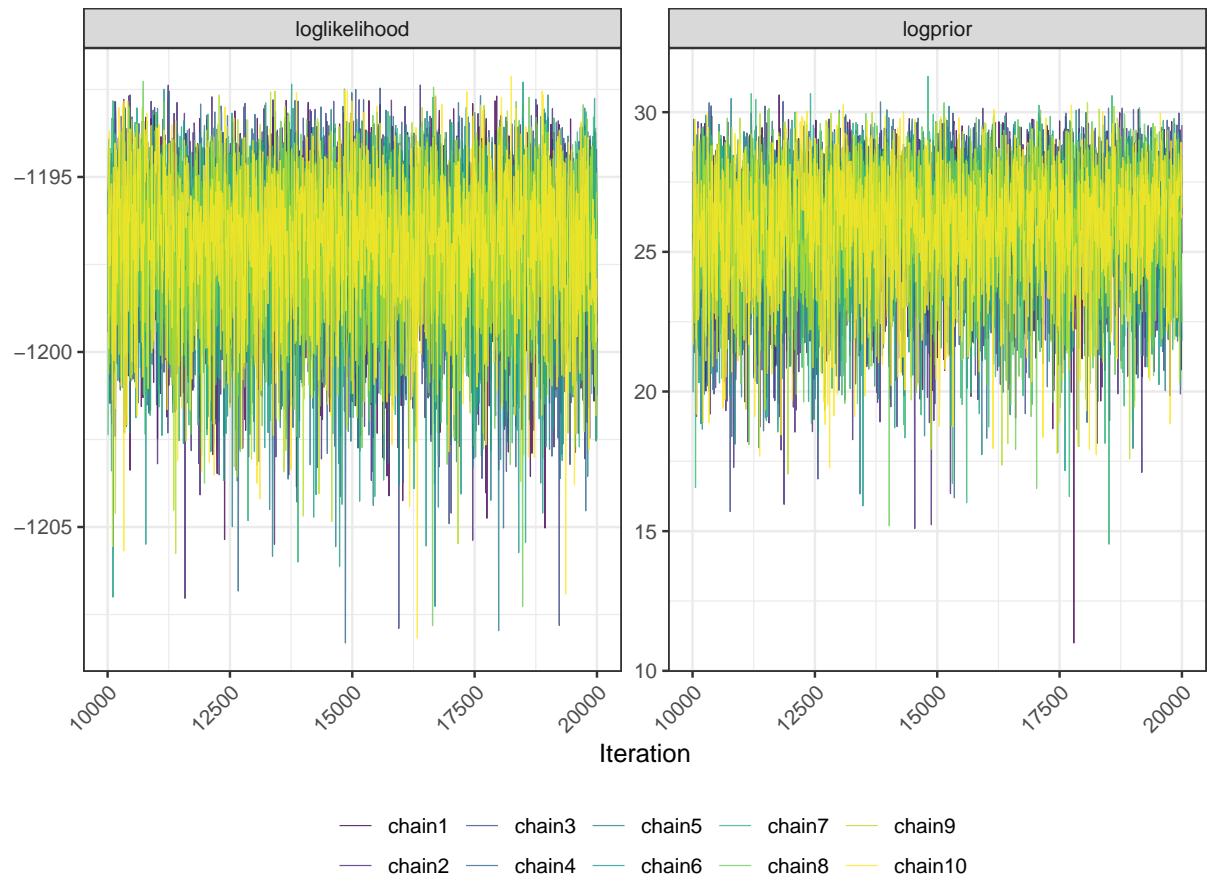
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	3.0230	6.3180	127.1227	121.5079	180.8127	208.4302	82.9065	0.2895	0.3826
x2	168.7124	182.4851	198.8147	198.1419	208.9172	224.1653	335.8919	-0.7040	0.3114
x3	208.1681	211.4020	217.9002	218.4766	229.3088	232.2255	379.4796	-3.1299	0.0030
x4	219.0021	219.6154	227.2993	227.0033	232.7731	232.9988	247.6267	-1.7232	0.0904
y1	0.0000	0.0132	0.7764	1.3655	4.5807	6.6126	140.8679	-1.9135	0.0640
y2	0.2543	2.7954	9.7986	7.9452	11.7084	12.2484	54.1226	0.4764	0.3561
y3	4.1540	5.1942	12.6209	10.2277	13.5043	14.0391	25.1261	-0.1299	0.3956
y4	0.8984	1.3307	9.0080	8.1558	13.1403	13.8821	121.7992	3.1072	0.0032
y5	0.0008	0.1011	2.5828	3.5318	10.5876	12.4921	91.1284	1.5794	0.1146
Ne1	0.8161	0.9082	1.0045	1.0044	1.1032	1.2106	9192.3424	1.1902	0.1965
Ne2	0.8056	0.9072	1.0043	1.0043	1.1006	1.1849	9556.0624	-0.7812	0.2940
Ne3	0.8047	0.9033	0.9994	1.0002	1.0982	1.1949	9328.7190	0.2761	0.3840
Ne4	0.8229	0.9086	1.0036	1.0038	1.0992	1.1954	9382.7272	-1.6473	0.1027
Ne5	0.8188	0.9025	1.0019	1.0013	1.0997	1.2077	8886.1241	0.7185	0.3082
Ne6	0.8094	0.8917	0.9905	0.9908	1.0888	1.1922	8931.6385	0.8734	0.2724
Ne7	0.8162	0.8951	0.9958	0.9955	1.0955	1.1924	4868.5045	-1.6808	0.0971

LA_CA1 with the Potential for Seroreversion Included

Fit Diagnostics

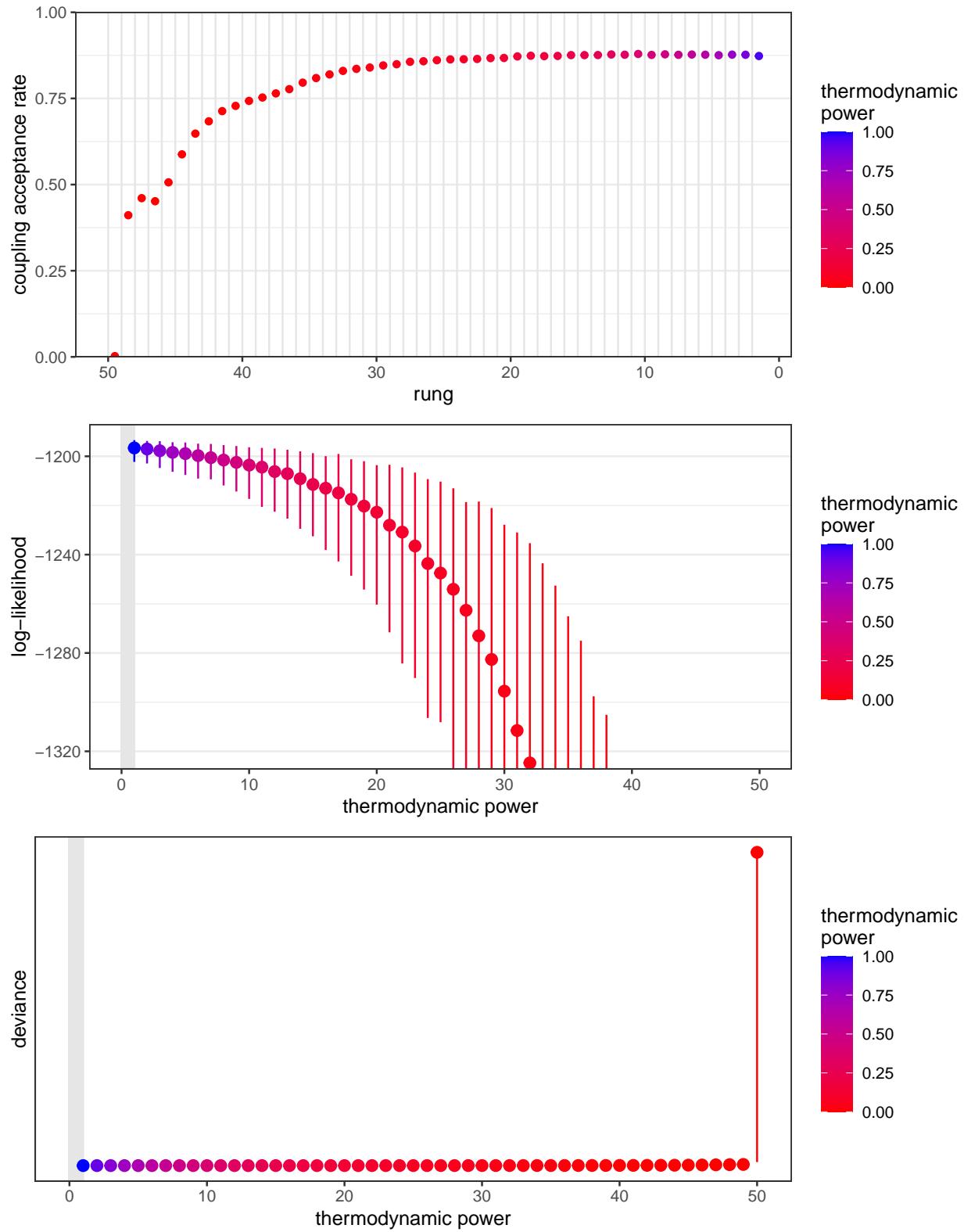
Log Likelihood & Prior Plot



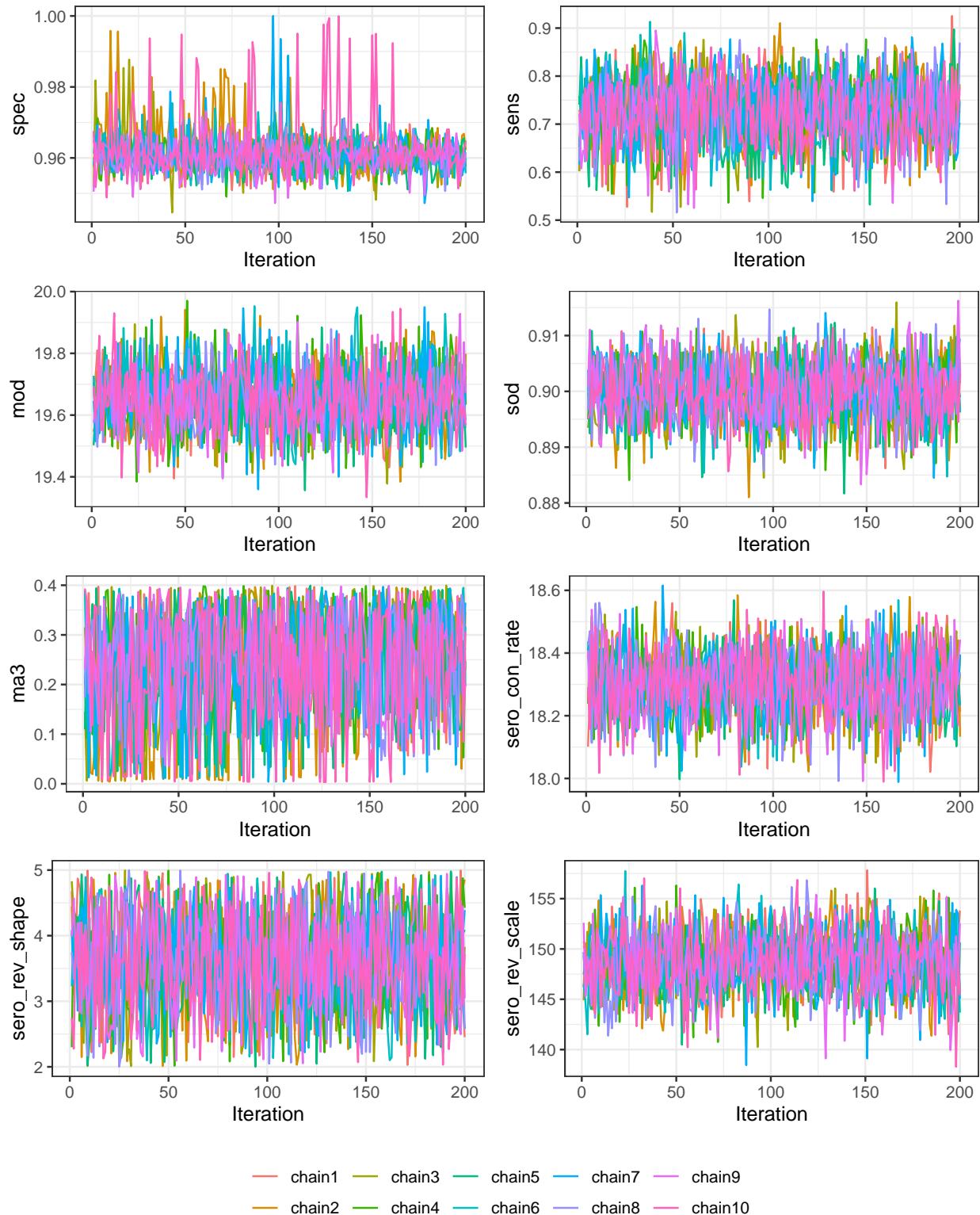
gelman_mpsrf

1

Metropolis Coupling Acceptance Plot

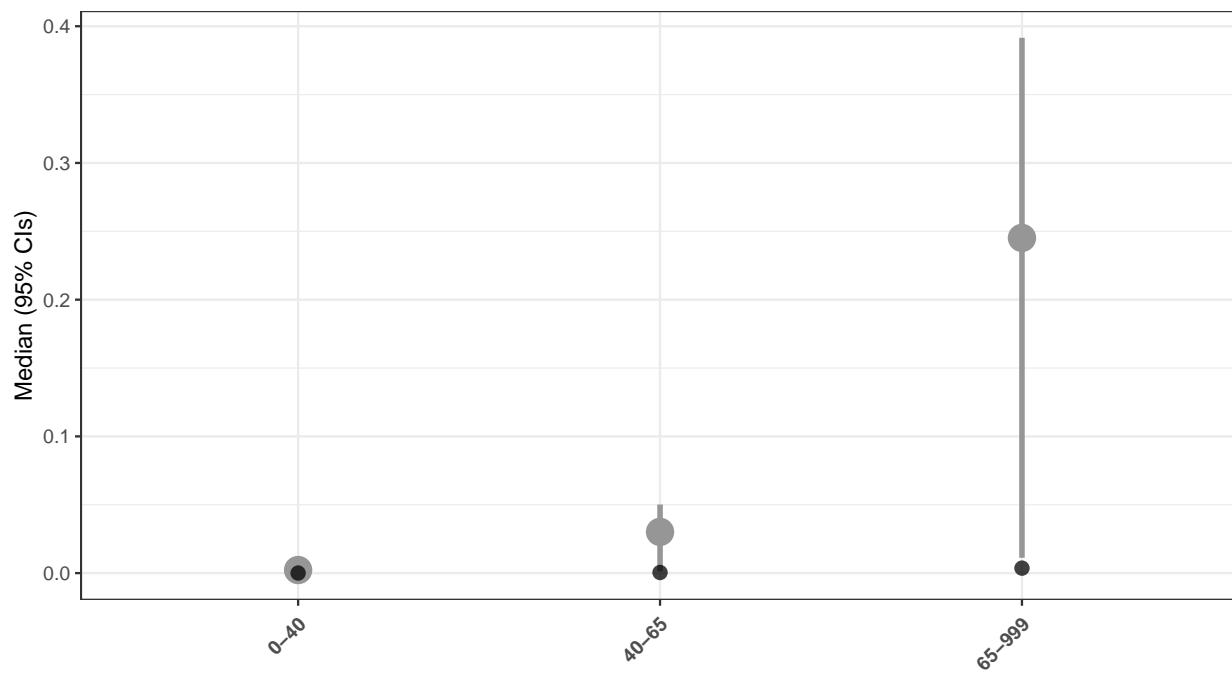


Serological Diagnostics



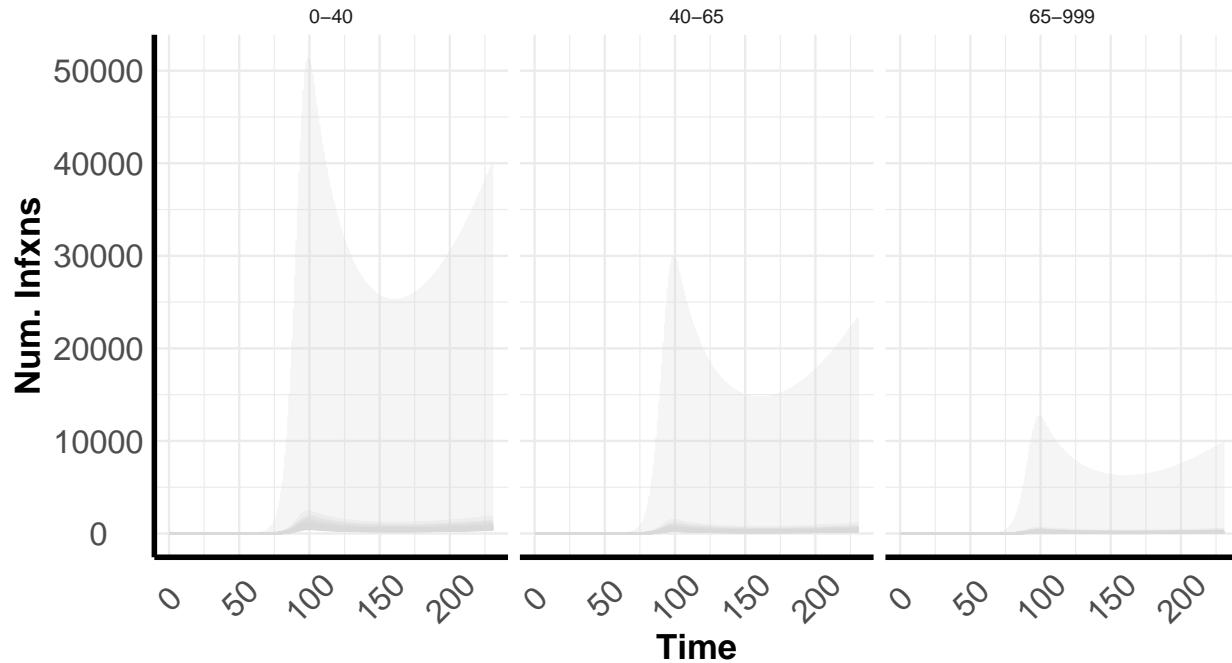
— chain1 — chain3 — chain5 — chain7 — chain9
— chain2 — chain4 — chain6 — chain8 — chain10

IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



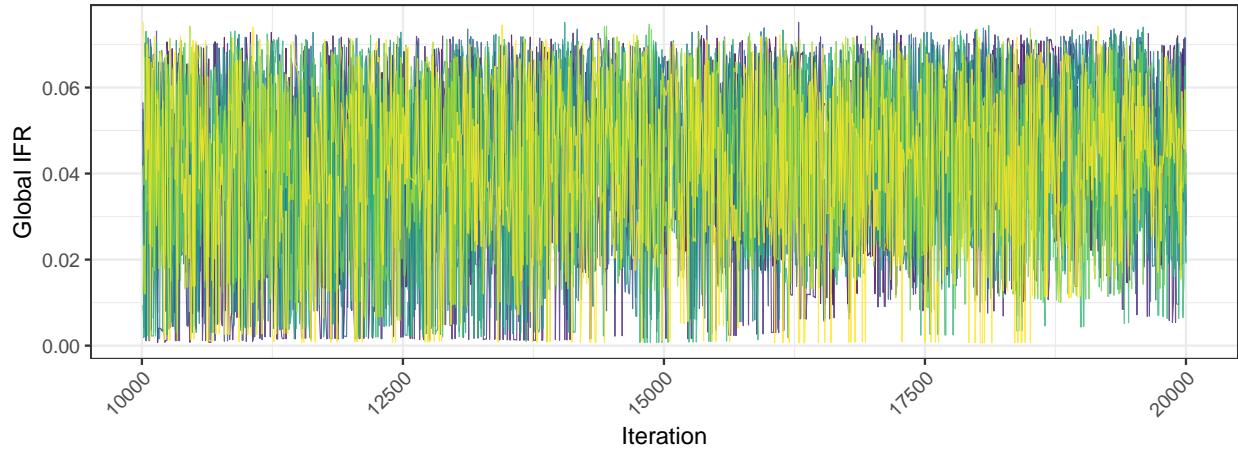
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-40	ma1	0.0000	0.0001	0.0023	0.0022	0.0039	0.0051	1310.456	4.7166	0e+00
40-65	ma2	0.0004	0.0014	0.0301	0.0289	0.0502	0.0603	1788.534	4.0588	1e-04
65-999	ma3	0.0035	0.0112	0.2452	0.2335	0.3916	0.3999	1242.631	4.2555	0e+00

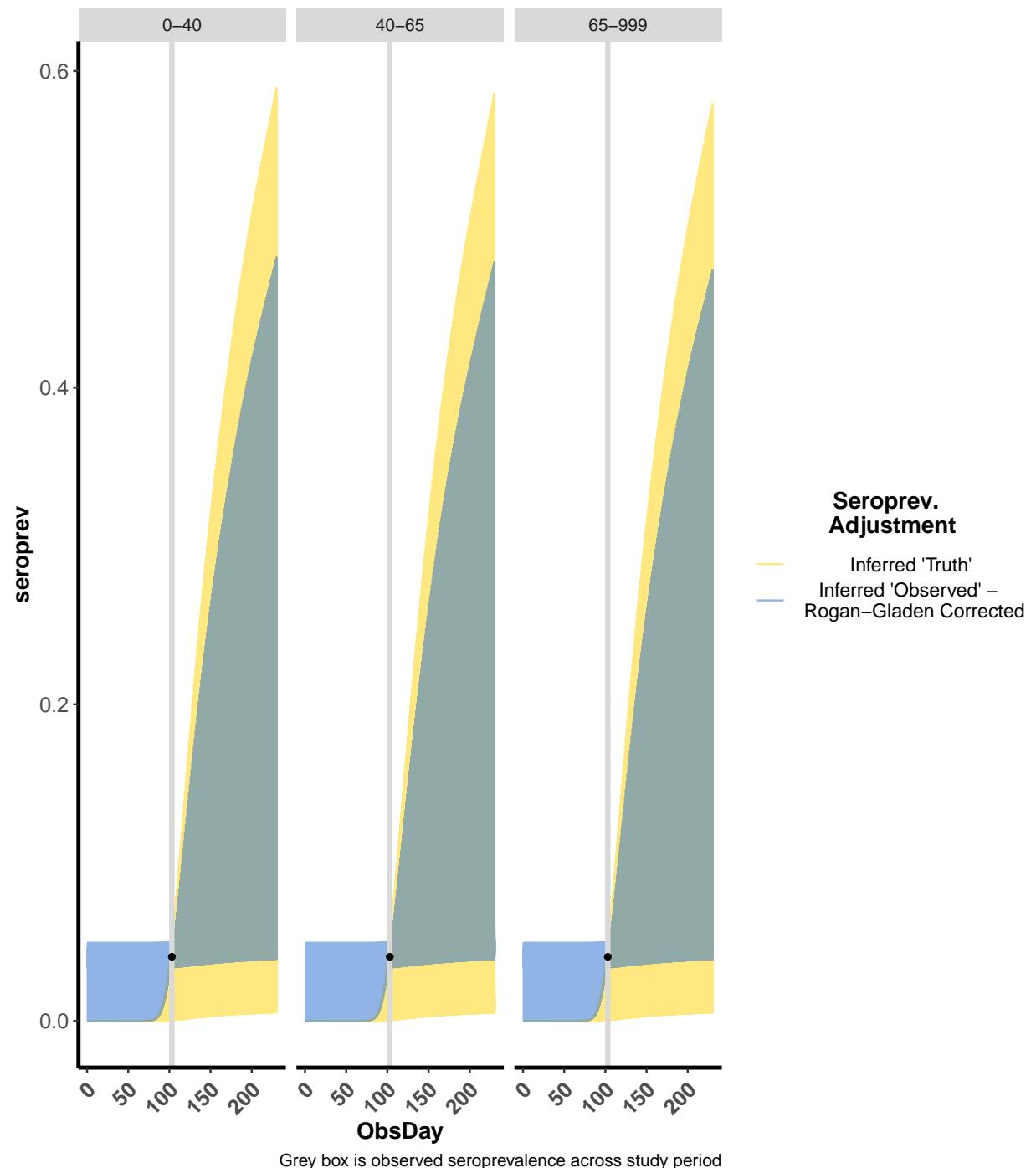
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
6e-04	0.0021	0.0442	0.0423	0.0723	0.082	2731.894	-7.8929	0

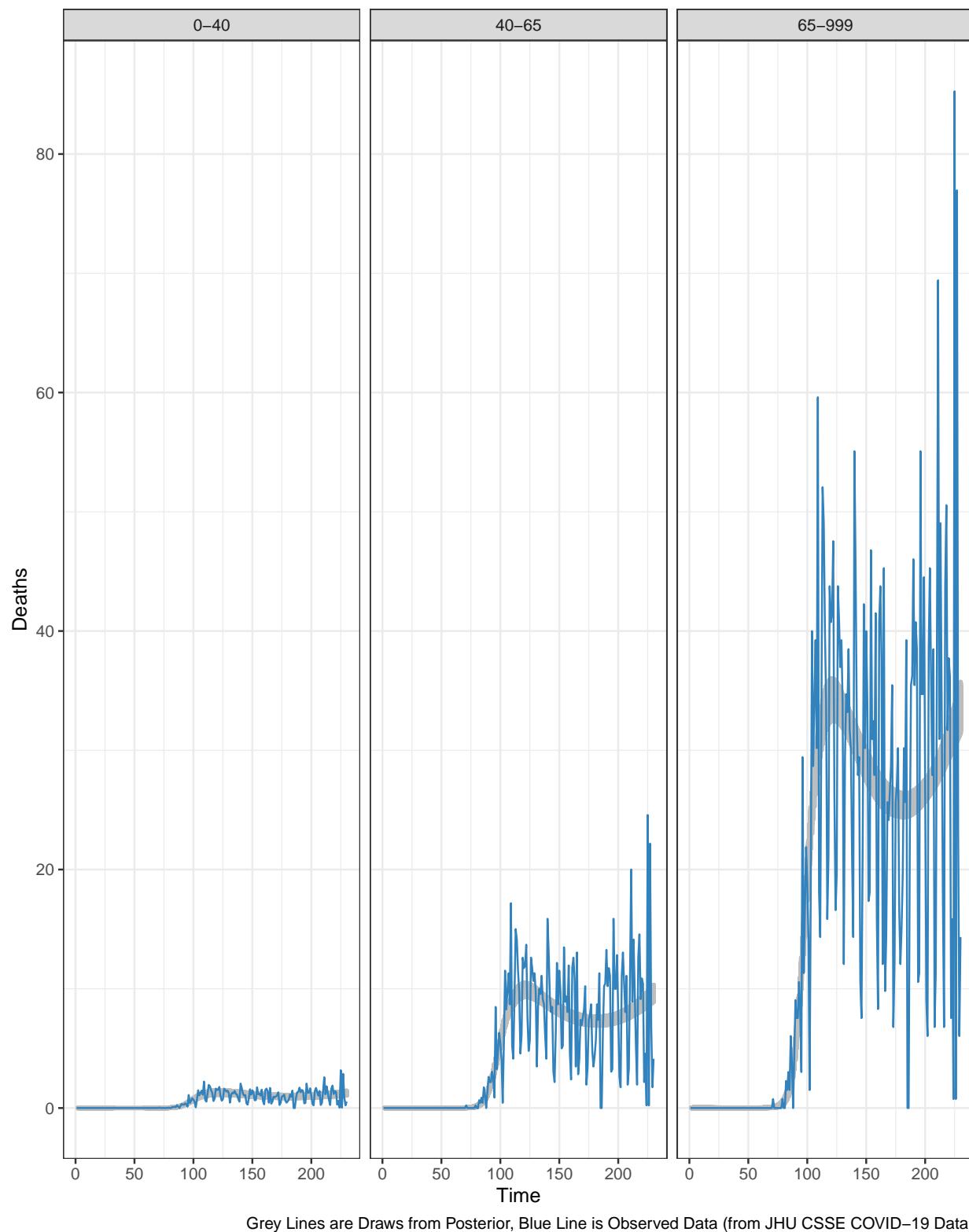
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0069	0.0117	0.0484	0.0461	0.0726	0.0782	382.3542	-1.8098	0.0776
chain2	0.0007	0.0013	0.0410	0.0370	0.0721	0.0801	243.4901	-5.2665	0.0000
chain3	0.0008	0.0045	0.0466	0.0453	0.0728	0.0801	96.2710	-7.1001	0.0000
chain4	0.0037	0.0122	0.0425	0.0425	0.0718	0.0784	418.9784	-4.5124	0.0000
chain5	0.0017	0.0055	0.0432	0.0418	0.0735	0.0787	385.5146	-1.5218	0.1253
chain6	0.0015	0.0030	0.0397	0.0405	0.0722	0.0795	382.3096	-2.5313	0.0162
chain7	0.0007	0.0020	0.0445	0.0418	0.0718	0.0790	647.4157	-0.0496	0.3985
chain8	0.0079	0.0106	0.0452	0.0434	0.0720	0.0799	414.3020	-1.4408	0.1413
chain9	0.0059	0.0110	0.0454	0.0440	0.0719	0.0791	631.6713	-0.0967	0.3971
chain10	0.0006	0.0007	0.0440	0.0404	0.0716	0.0820	819.9780	-0.3703	0.3725



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



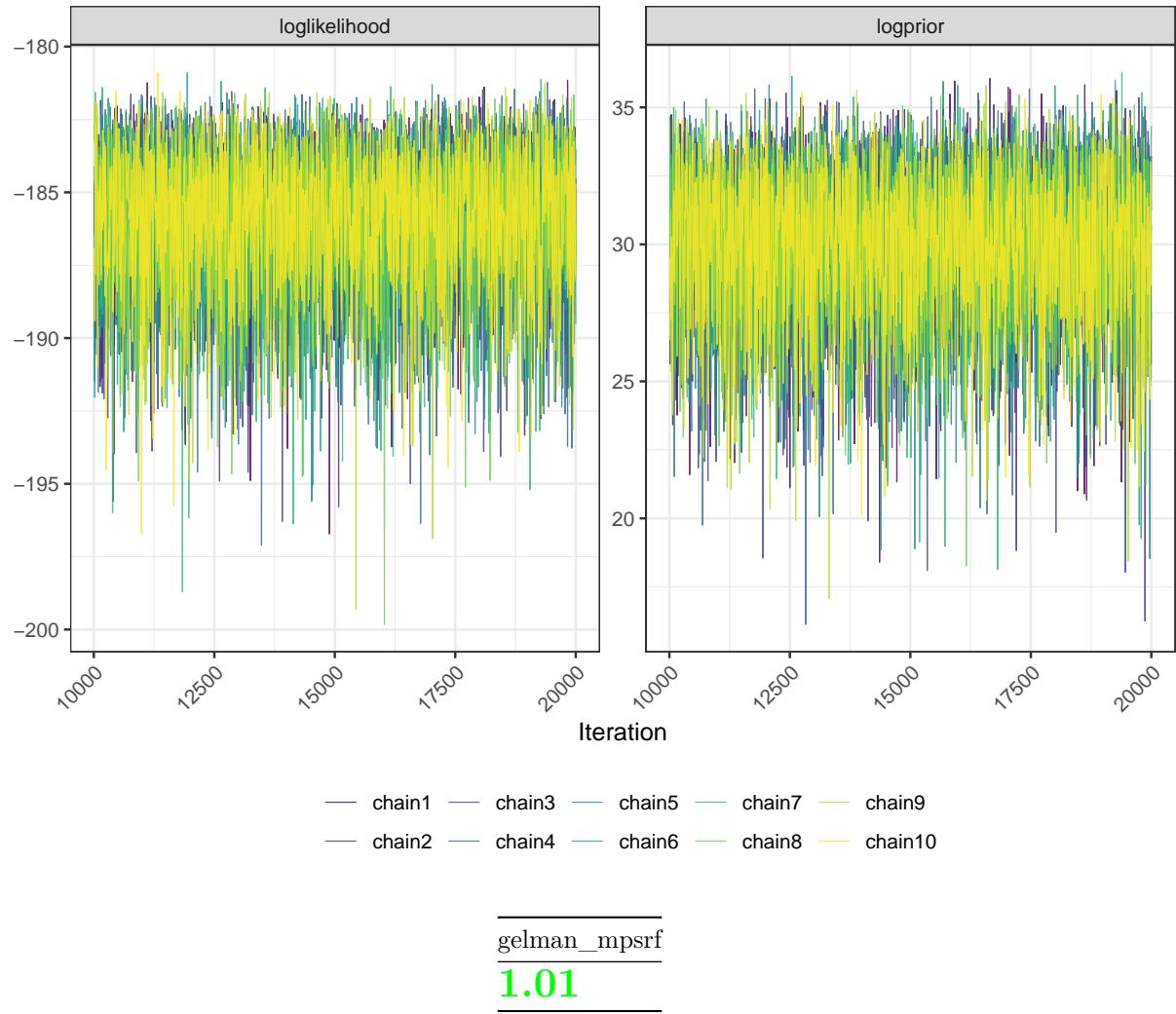
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.0106	1.8499	60.7222	49.5304	73.0214	84.8762	1762.0343	0.7540	0.3002
x2	92.9970	94.5674	96.8656	97.1270	100.7976	105.4905	6058.5494	0.1612	0.3938
x3	95.4752	98.9835	103.6170	103.6773	108.7578	114.2516	7712.4051	-1.1186	0.2134
x4	219.0006	219.1846	224.0014	224.5881	232.4100	232.9973	5962.4786	0.6165	0.3299
y1	0.0000	0.0351	0.8626	1.1251	3.5416	6.6432	3067.5125	-2.7571	0.0089
y2	0.0001	0.0261	0.7773	1.0562	3.6089	8.3590	3881.5854	-1.2371	0.1856
y3	6.6164	6.8037	7.3197	7.5707	10.3816	11.5434	773.5442	-5.8083	0.0000
y4	6.5933	6.7669	7.2746	7.5262	10.3378	11.4971	771.2264	-5.7999	0.0000
y5	6.3162	6.5245	7.0560	7.3030	10.1139	11.2984	767.7440	-5.8927	0.0000
Ne1	0.8045	0.9027	0.9999	0.9999	1.0986	1.1811	7864.2558	0.9080	0.2642
Ne2	0.7849	0.8977	0.9983	0.9989	1.0971	1.2010	8153.2038	0.2245	0.3890
Ne3	0.7888	0.9045	1.0020	1.0021	1.1008	1.2039	6134.0025	0.1943	0.3915

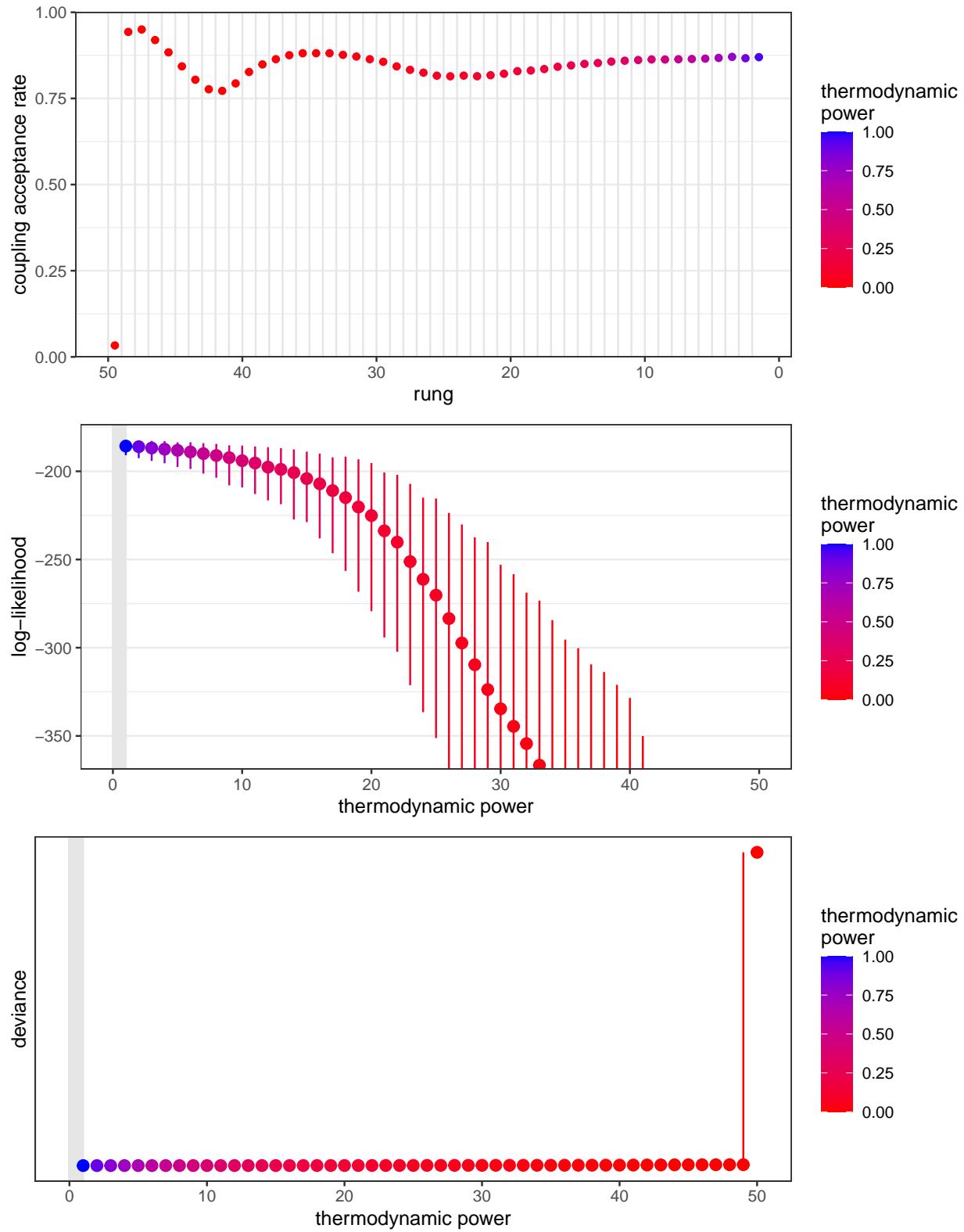
LUX1 with the Potential for Seroreversion Included

Fit Diagnostics

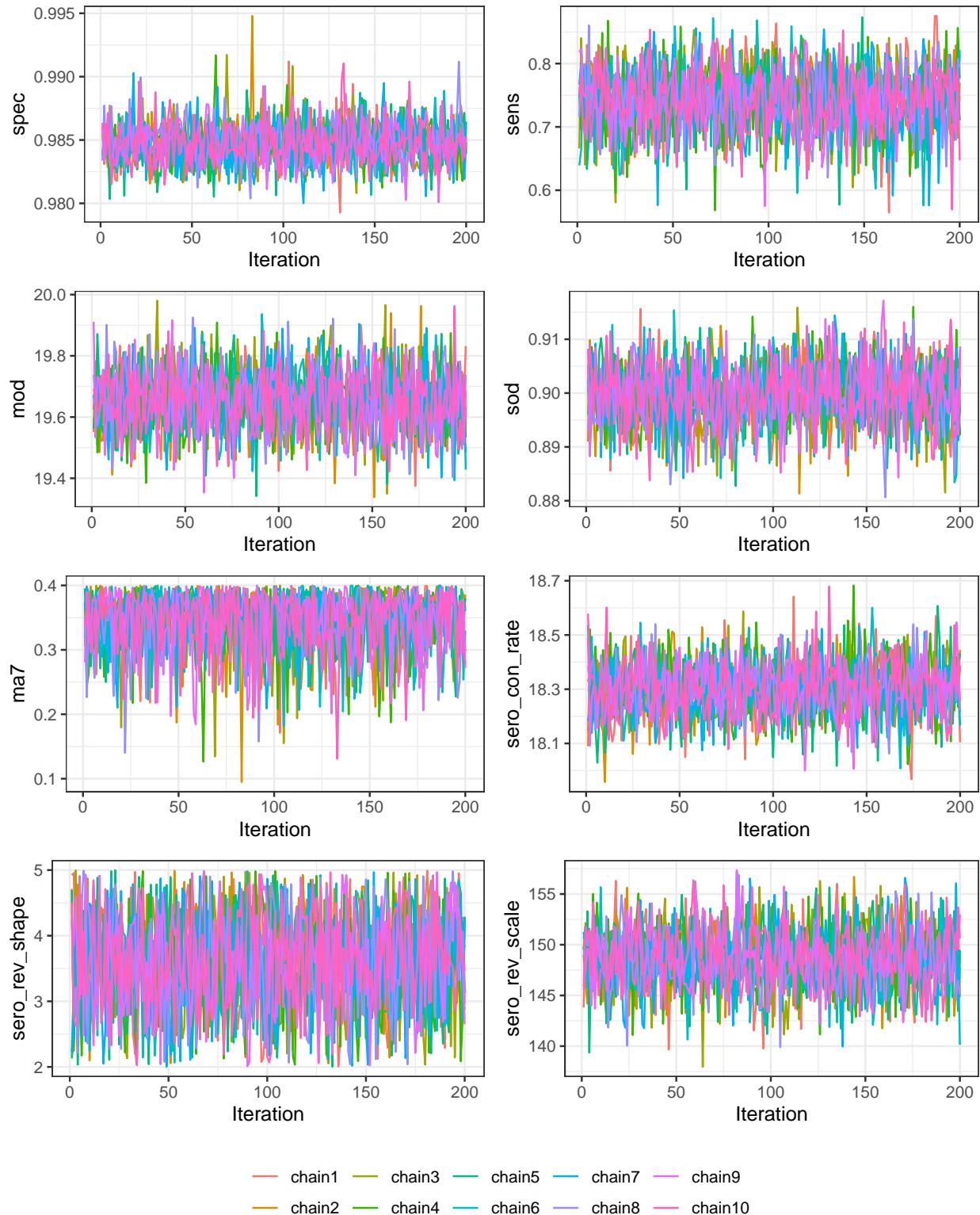
Log Likelihood & Prior Plot



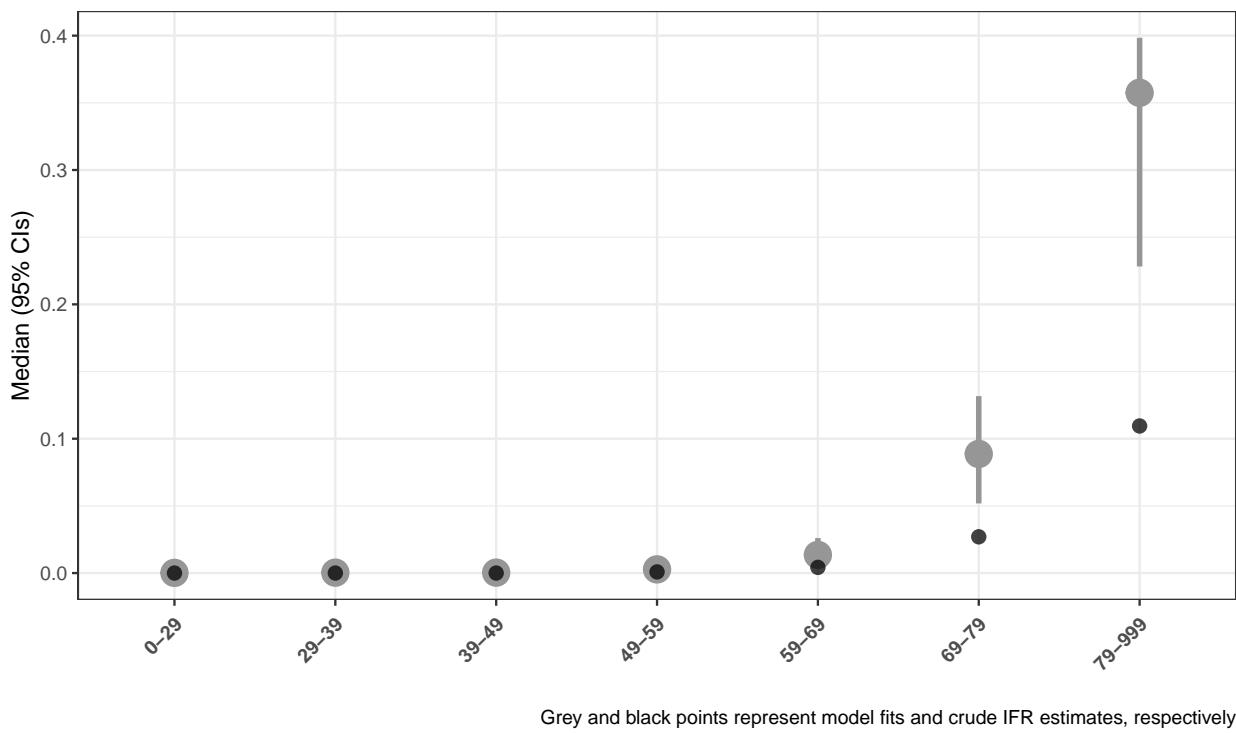
Metropolis Coupling Acceptance Plot



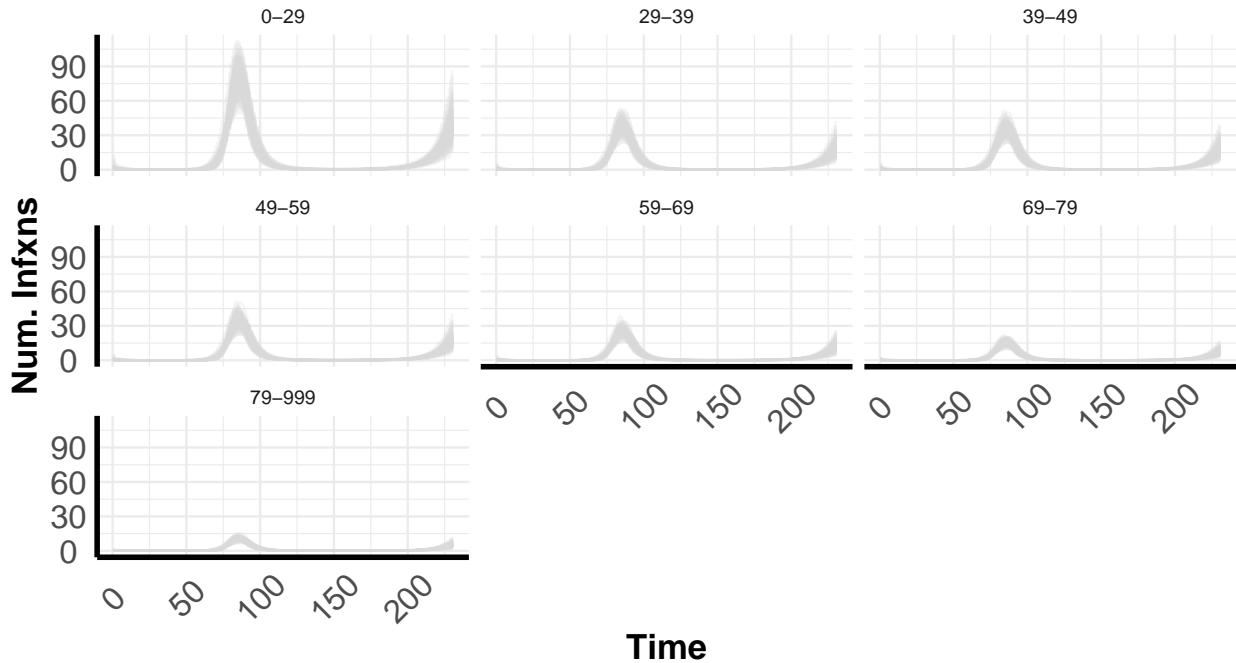
Serological Diagnostics



IFRs & Incidence Curve



Posterior Draws of the Infection Curve



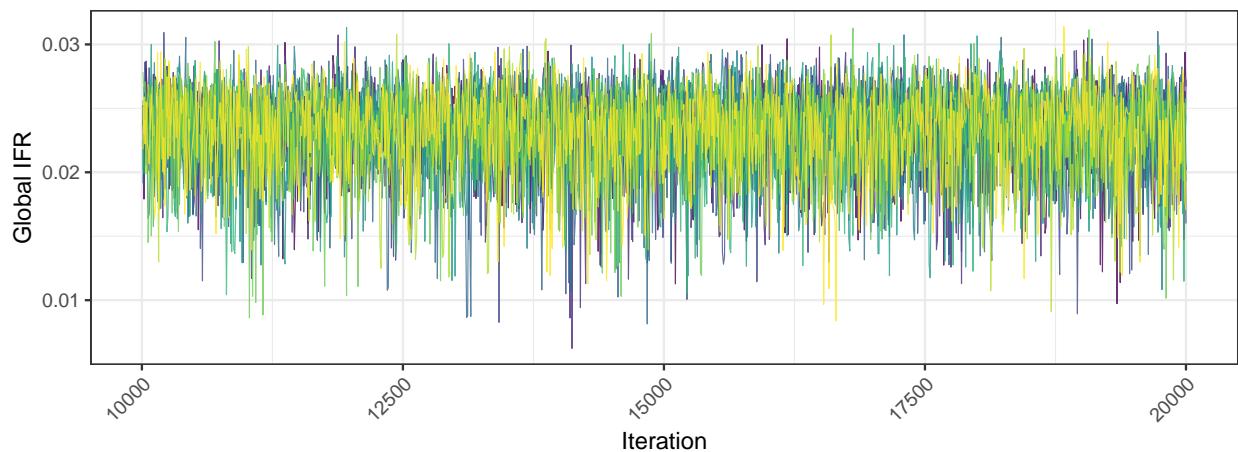
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-29	ma1	0.0000	0.0000	0.0001	0.0001	0.0003	0.0005	9369.351	1.1654	0.2023
29-39	ma2	0.0000	0.0000	0.0003	0.0003	0.0007	0.0010	9092.029	0.1044	0.3968
39-49	ma3	0.0000	0.0000	0.0003	0.0003	0.0007	0.0010	9415.079	-0.6589	0.3211
49-59	ma4	0.0000	0.0003	0.0027	0.0031	0.0077	0.0132	10000.000	-0.8382	0.2808
59-69	ma5	0.0008	0.0049	0.0135	0.0140	0.0261	0.0424	10000.000	0.4901	0.3538
69-79	ma6	0.0222	0.0518	0.0887	0.0895	0.1317	0.1799	8833.041	-0.4547	0.3598
79-999	ma7	0.0948	0.2282	0.3575	0.3445	0.3984	0.4000	6263.793	0.9560	0.2526

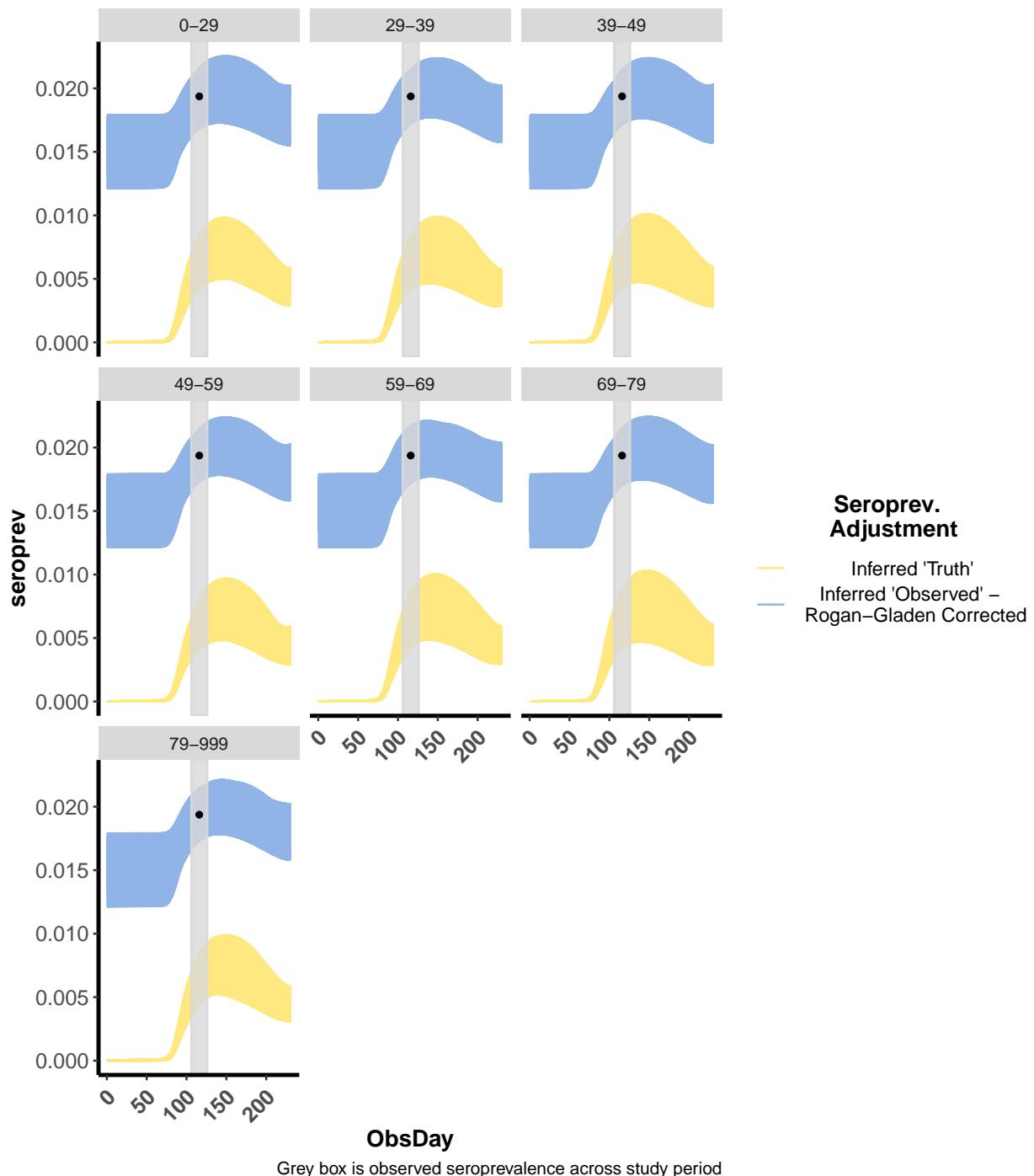
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0064	0.0153	0.0239	0.0233	0.0292	0.0342	8853.458	1.8856	0.0674

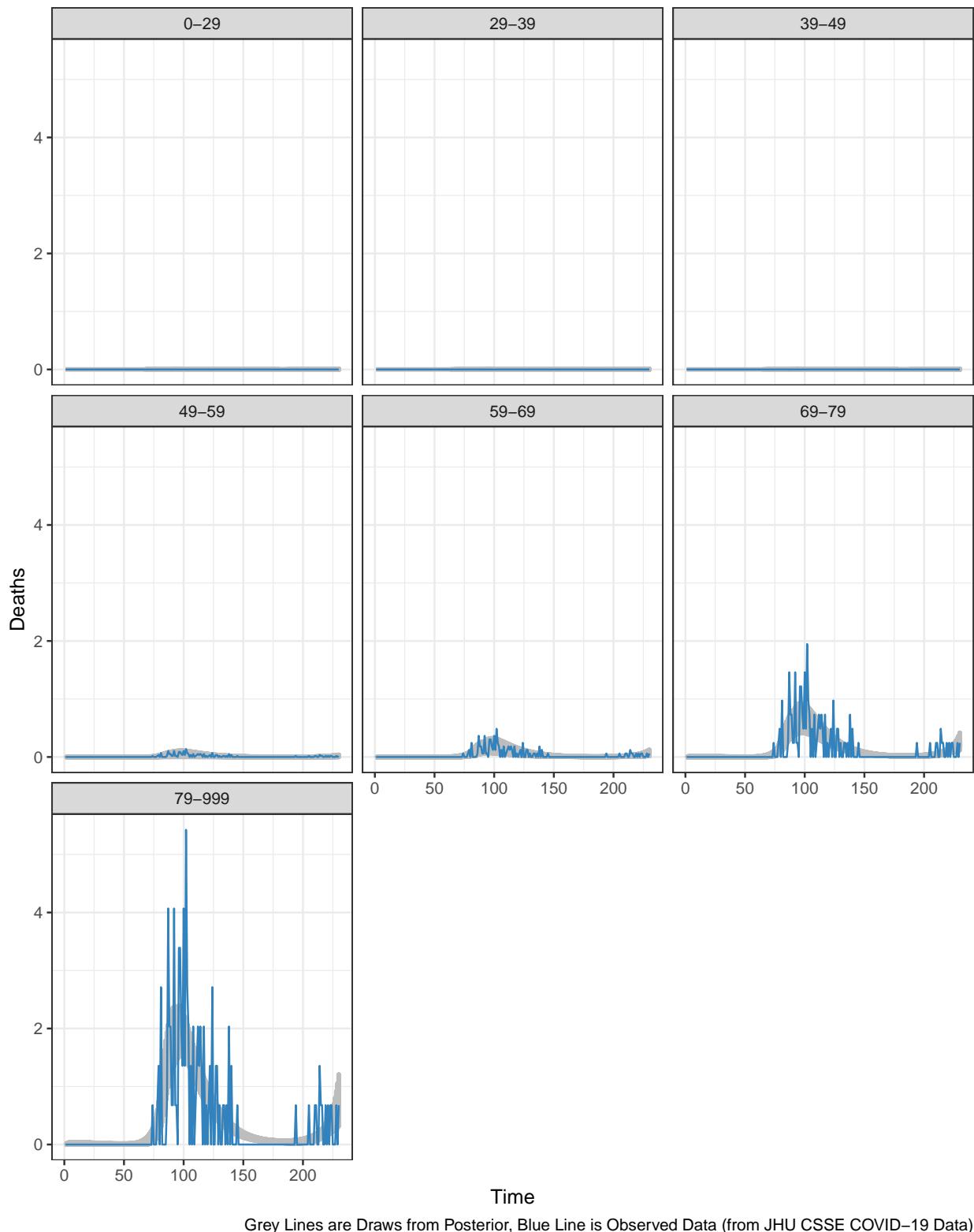
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0101	0.0159	0.0240	0.0234	0.0290	0.0324	1000.0000	0.2360	0.3880
chain2	0.0064	0.0150	0.0241	0.0235	0.0291	0.0327	553.6446	1.7717	0.0830
chain3	0.0082	0.0151	0.0238	0.0233	0.0289	0.0320	1000.0000	0.5916	0.3349
chain4	0.0081	0.0140	0.0238	0.0231	0.0291	0.0327	579.0342	1.3400	0.1625
chain5	0.0104	0.0164	0.0238	0.0235	0.0294	0.0342	734.9293	-0.4186	0.3655
chain6	0.0111	0.0149	0.0239	0.0233	0.0293	0.0318	1000.0000	-0.2595	0.3857
chain7	0.0105	0.0157	0.0240	0.0235	0.0291	0.0313	885.0530	-0.3653	0.3732
chain8	0.0076	0.0151	0.0239	0.0233	0.0293	0.0321	485.8731	0.1207	0.3960
chain9	0.0091	0.0148	0.0237	0.0233	0.0293	0.0322	771.4153	3.0316	0.0040
chain10	0.0083	0.0152	0.0238	0.0233	0.0293	0.0322	555.5416	0.1934	0.3916



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



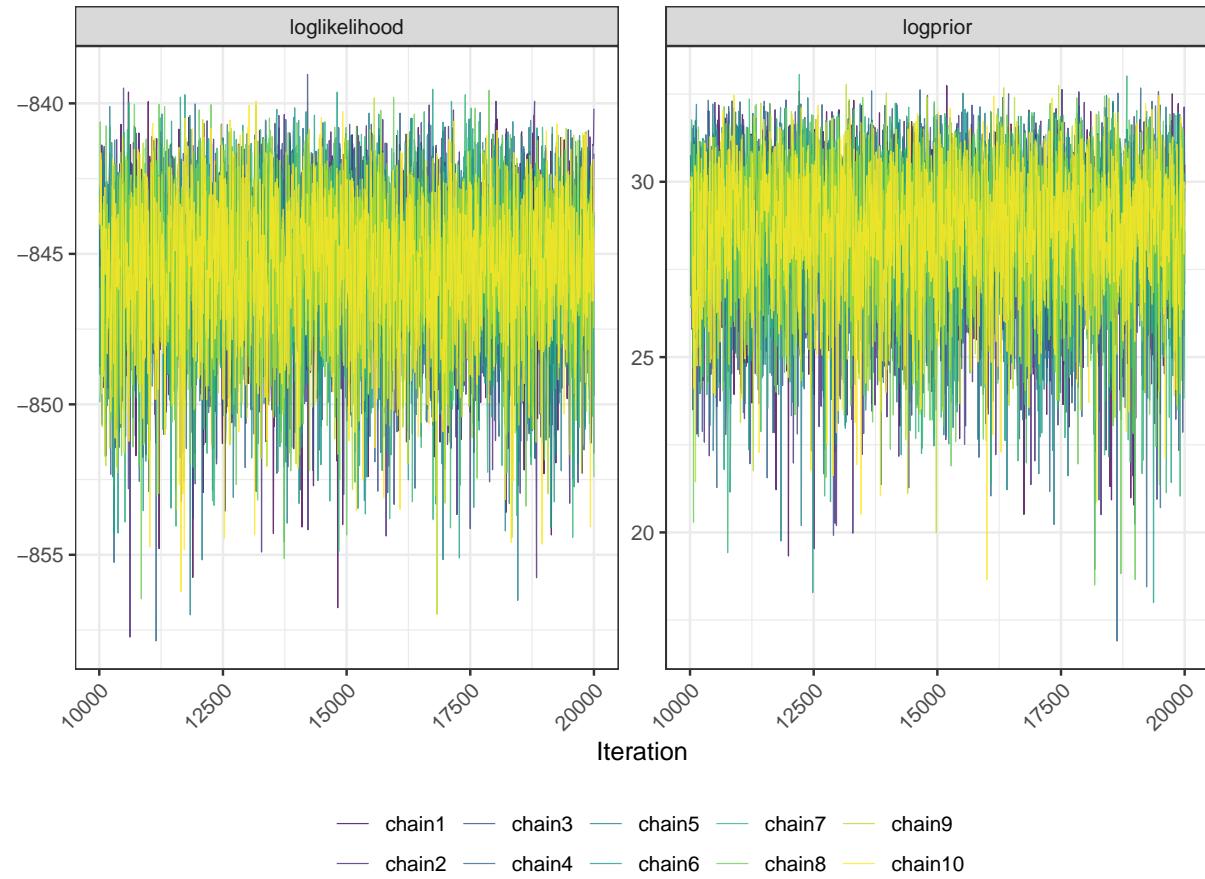
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.0124	1.9210	62.0228	54.4306	73.5060	82.6417	2928.769	-0.4292	0.3638
x2	65.5352	73.2739	82.0255	82.4196	93.8755	105.9618	5520.798	-0.5267	0.3473
x3	83.1840	90.6135	103.6873	104.4841	122.4899	146.3114	5321.960	-0.1353	0.3953
x4	219.0000	219.2390	224.1909	224.7192	232.3384	232.9995	7742.224	-0.5936	0.3345
y1	0.0003	0.0413	1.0024	1.2207	3.4859	4.9020	5153.607	1.0659	0.2261
y2	0.0002	0.0402	0.9969	1.2331	3.6092	6.3200	7395.843	1.6184	0.1077
y3	2.7372	4.1103	5.2358	5.1708	5.9146	6.9837	4757.940	-1.5601	0.1181
y4	0.0011	0.9294	3.3352	3.2401	5.0241	6.6080	4788.127	0.2778	0.3838
y5	1.6002	3.2466	4.2599	4.2716	5.3247	6.2187	7750.337	-0.9996	0.2421
Ne1	0.8141	0.9001	0.9992	0.9987	1.0969	1.1919	9168.378	-1.9026	0.0653
Ne2	0.7961	0.8979	0.9973	0.9976	1.0957	1.1729	9618.969	0.8293	0.2829
Ne3	0.7877	0.8980	0.9971	0.9974	1.0977	1.1973	10000.000	1.0432	0.2315
Ne4	0.8136	0.8987	0.9972	0.9969	1.0927	1.1830	10000.000	-1.3843	0.1530
Ne5	0.8051	0.9014	0.9971	0.9974	1.0928	1.2064	10000.000	0.4228	0.3648
Ne6	0.8113	0.9005	0.9968	0.9970	1.0950	1.2227	10000.000	0.1942	0.3915
Ne7	0.8164	0.9155	1.0136	1.0129	1.1090	1.2258	10000.000	-0.5186	0.3487

NLD1 with the Potential for Seroreversion Included

Fit Diagnostics

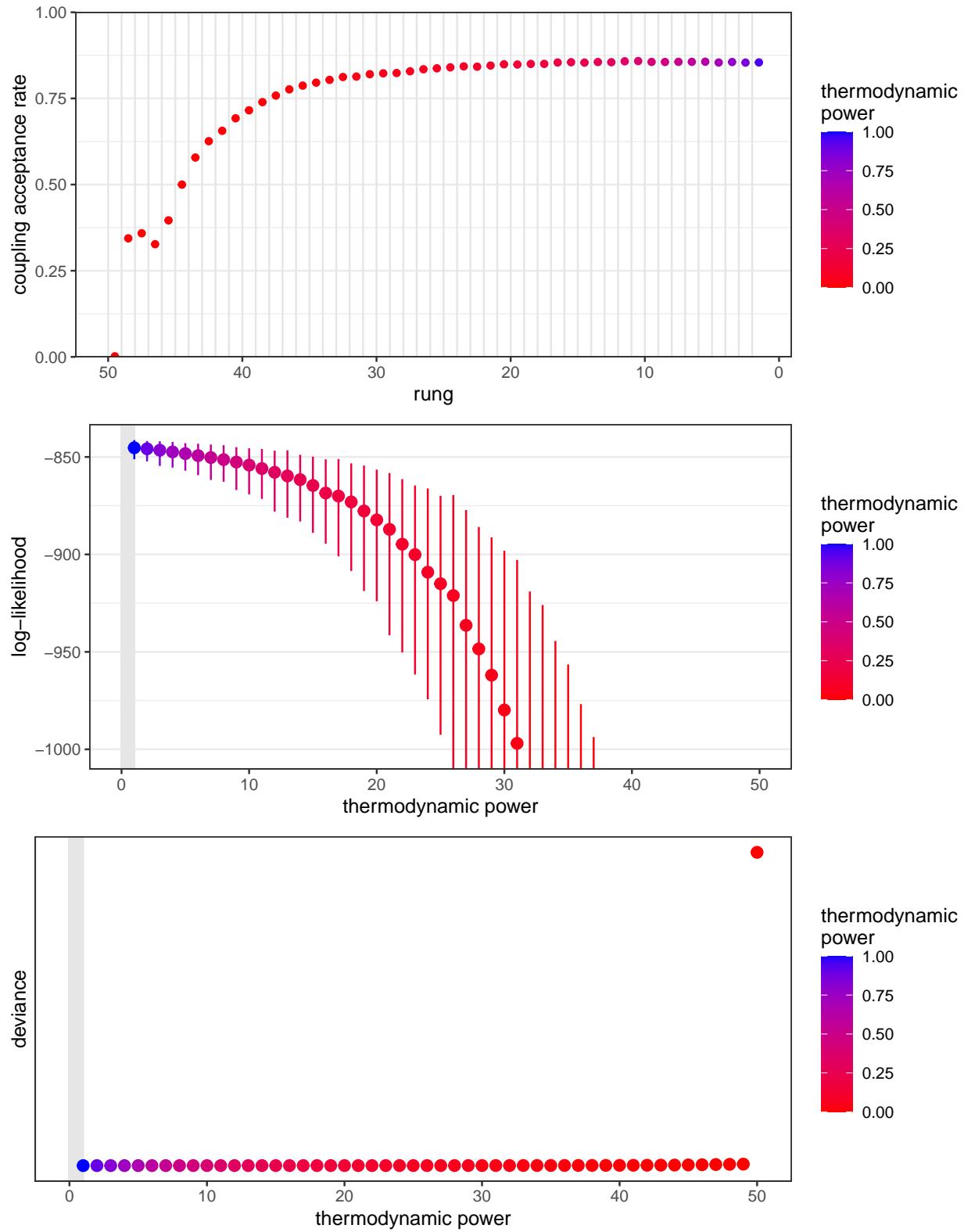
Log Likelihood & Prior Plot



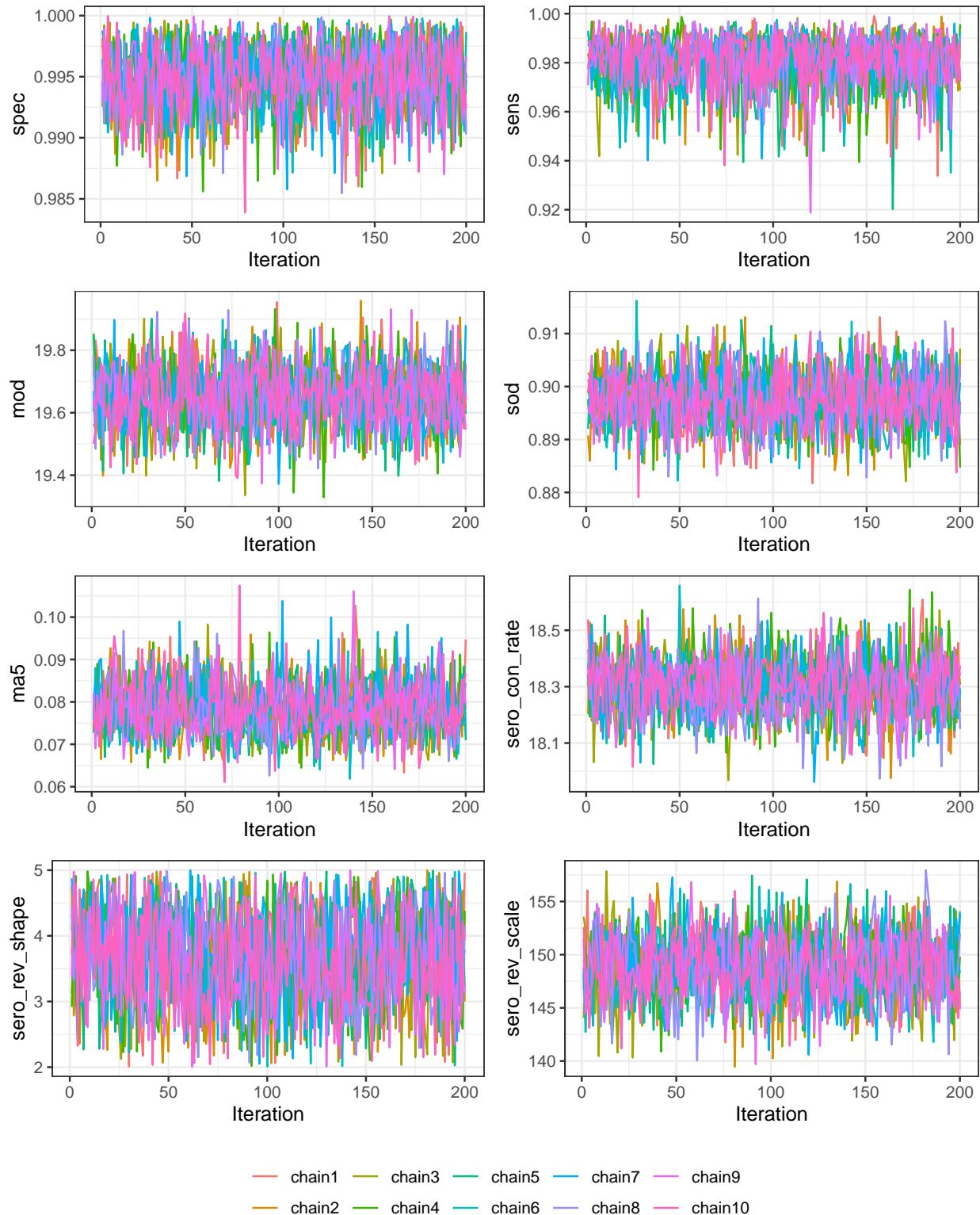
gelman_mpsrf

1

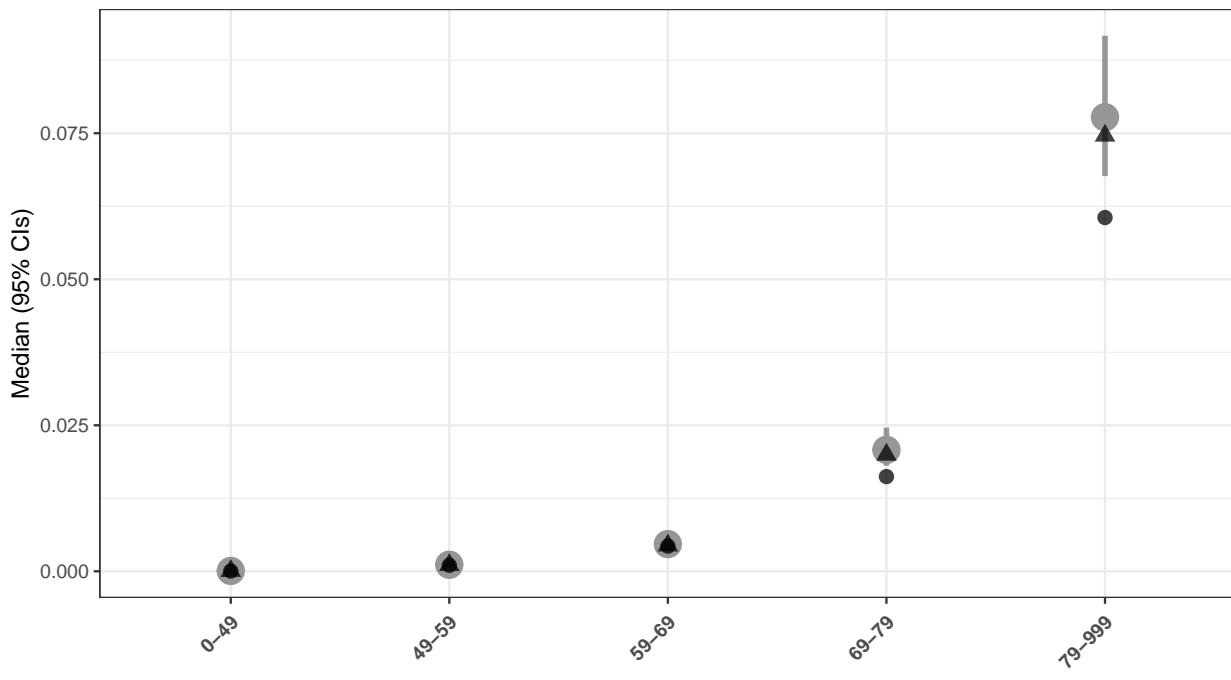
Metropolis Coupling Acceptance Plot



Serological Diagnostics

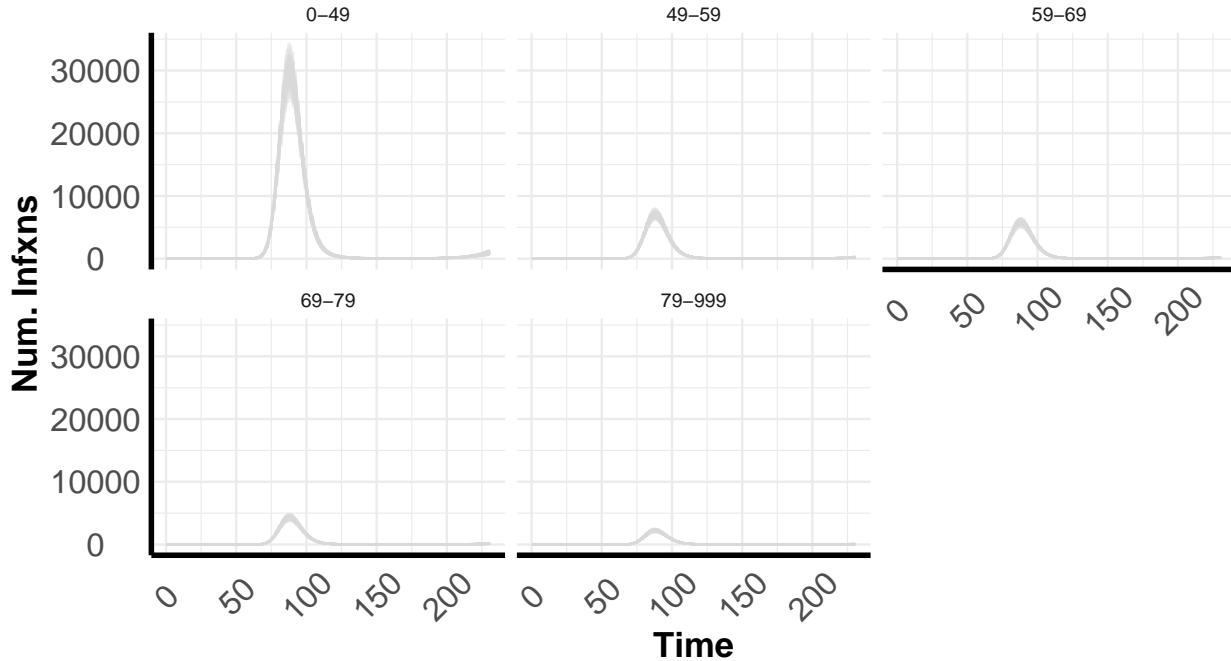


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



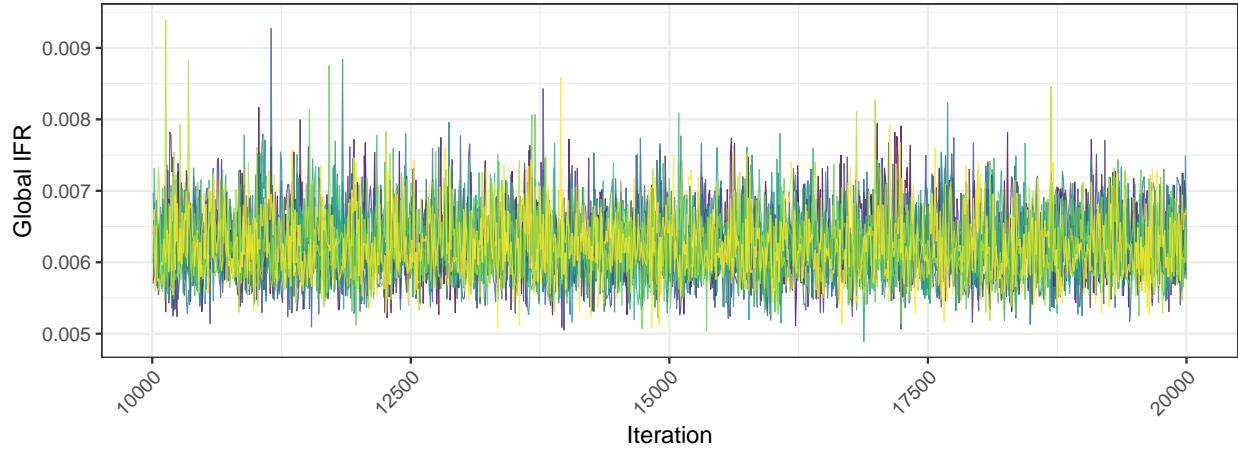
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-49	ma1	0.0000	0.0000	0.0001	0.0001	0.0001	0.0001	8776.312	-0.0200	0.3989
49-59	ma2	0.0008	0.0009	0.0011	0.0011	0.0014	0.0017	8393.819	1.2658	0.1791
59-69	ma3	0.0035	0.0040	0.0047	0.0047	0.0056	0.0072	6277.556	1.1782	0.1993
69-79	ma4	0.0159	0.0181	0.0208	0.0209	0.0246	0.0315	5803.807	2.6249	0.0127
79-999	ma5	0.0603	0.0677	0.0777	0.0783	0.0917	0.1204	4064.831	2.6222	0.0128

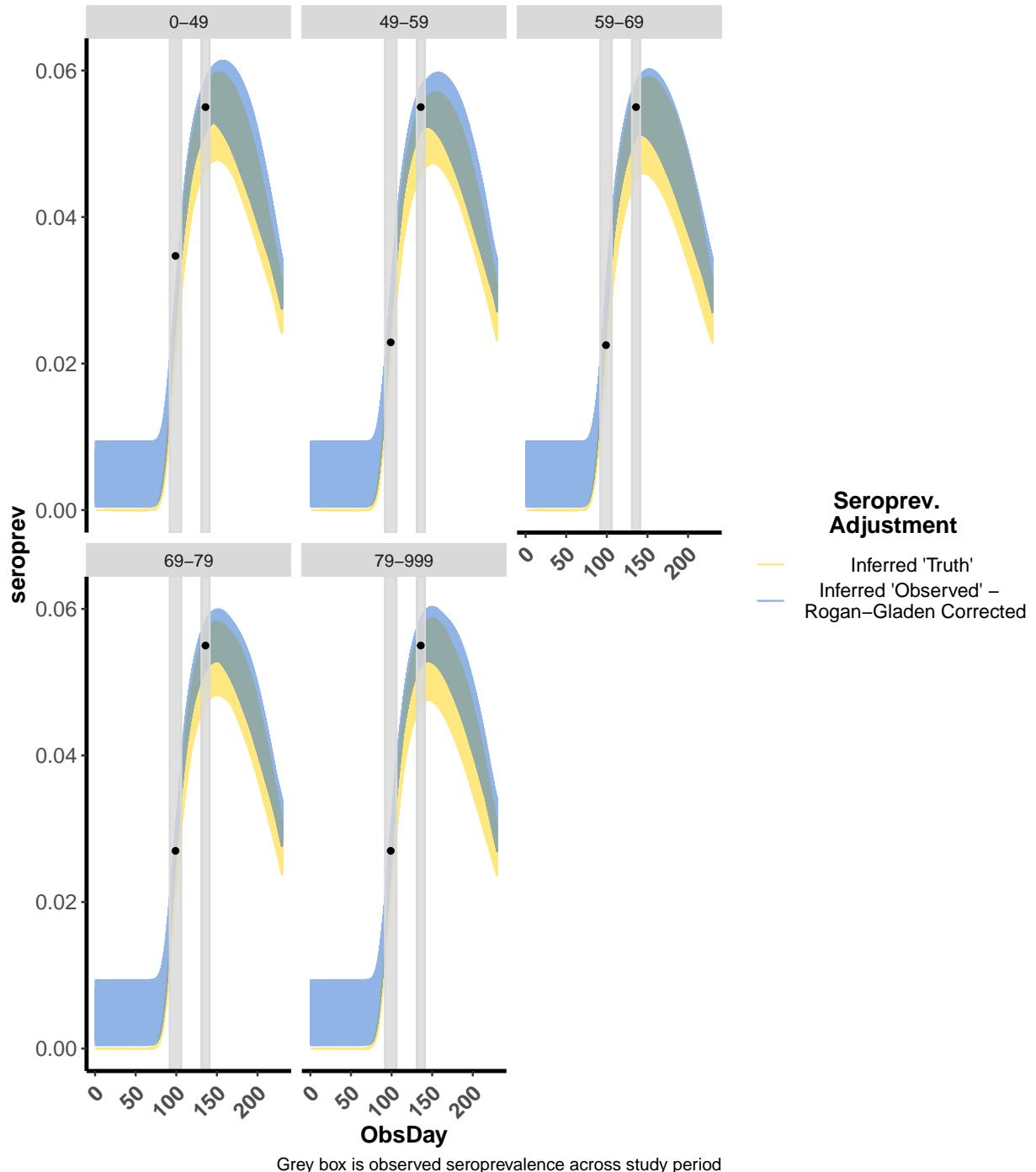
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0049	0.0054	0.0061	0.0062	0.0072	0.0089	4644.474	1.6437	0.1033

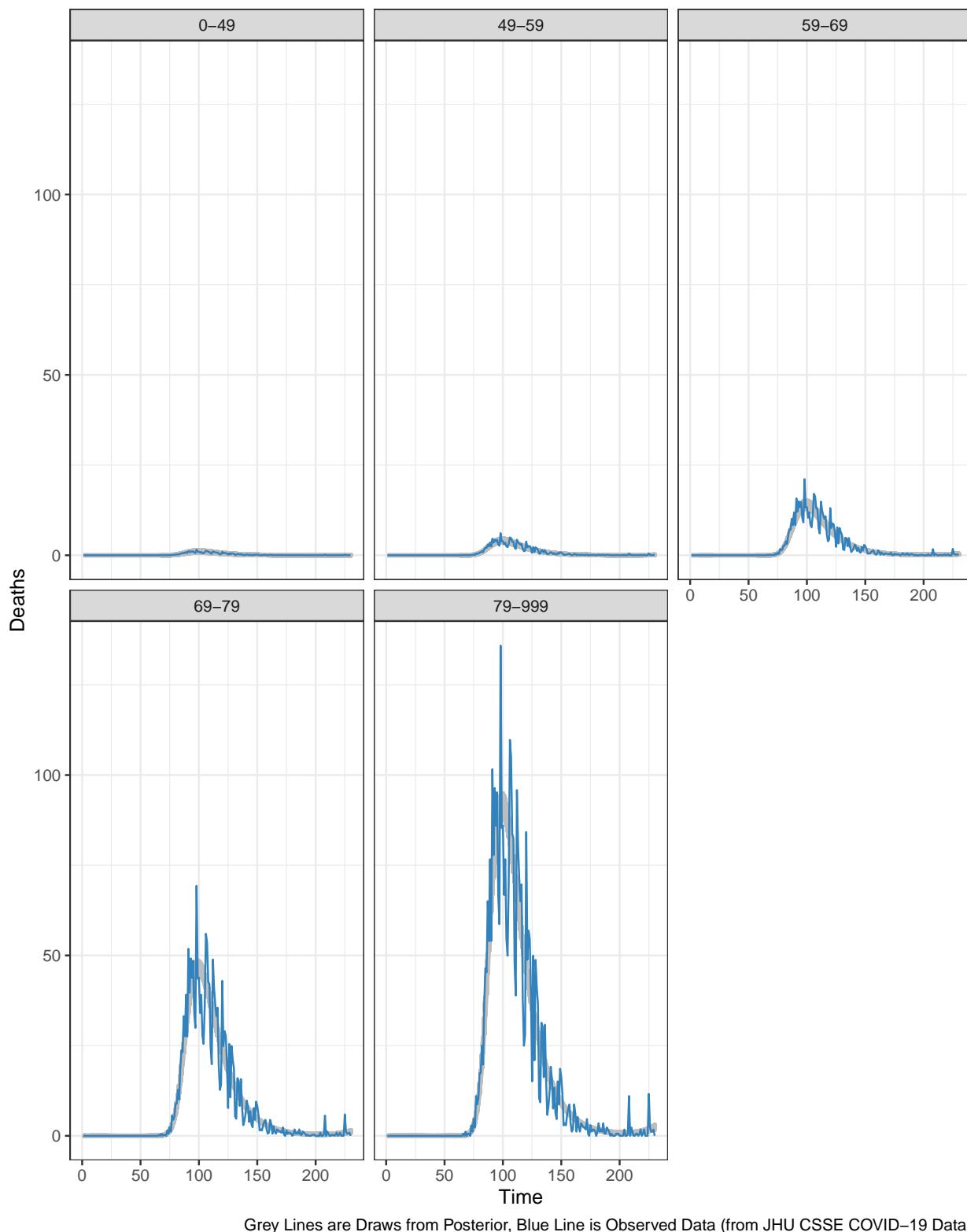
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0051	0.0054	0.0061	0.0062	0.0073	0.0080	774.8584	-1.6514	0.1020
chain2	0.0051	0.0054	0.0061	0.0062	0.0072	0.0078	587.7679	0.9217	0.2609
chain3	0.0050	0.0053	0.0061	0.0061	0.0071	0.0081	520.3447	-1.7754	0.0825
chain4	0.0050	0.0054	0.0061	0.0062	0.0071	0.0089	711.1125	1.1111	0.2152
chain5	0.0052	0.0054	0.0062	0.0062	0.0072	0.0083	481.5074	-0.9654	0.2503
chain6	0.0049	0.0054	0.0061	0.0062	0.0071	0.0084	546.7148	0.7508	0.3010
chain7	0.0051	0.0055	0.0061	0.0062	0.0072	0.0077	798.8956	0.7190	0.3081
chain8	0.0049	0.0054	0.0061	0.0062	0.0071	0.0084	446.7125	1.2538	0.1818
chain9	0.0052	0.0054	0.0061	0.0061	0.0072	0.0089	550.8201	2.5716	0.0146
chain10	0.0050	0.0054	0.0061	0.0062	0.0072	0.0086	539.9560	0.9964	0.2429



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



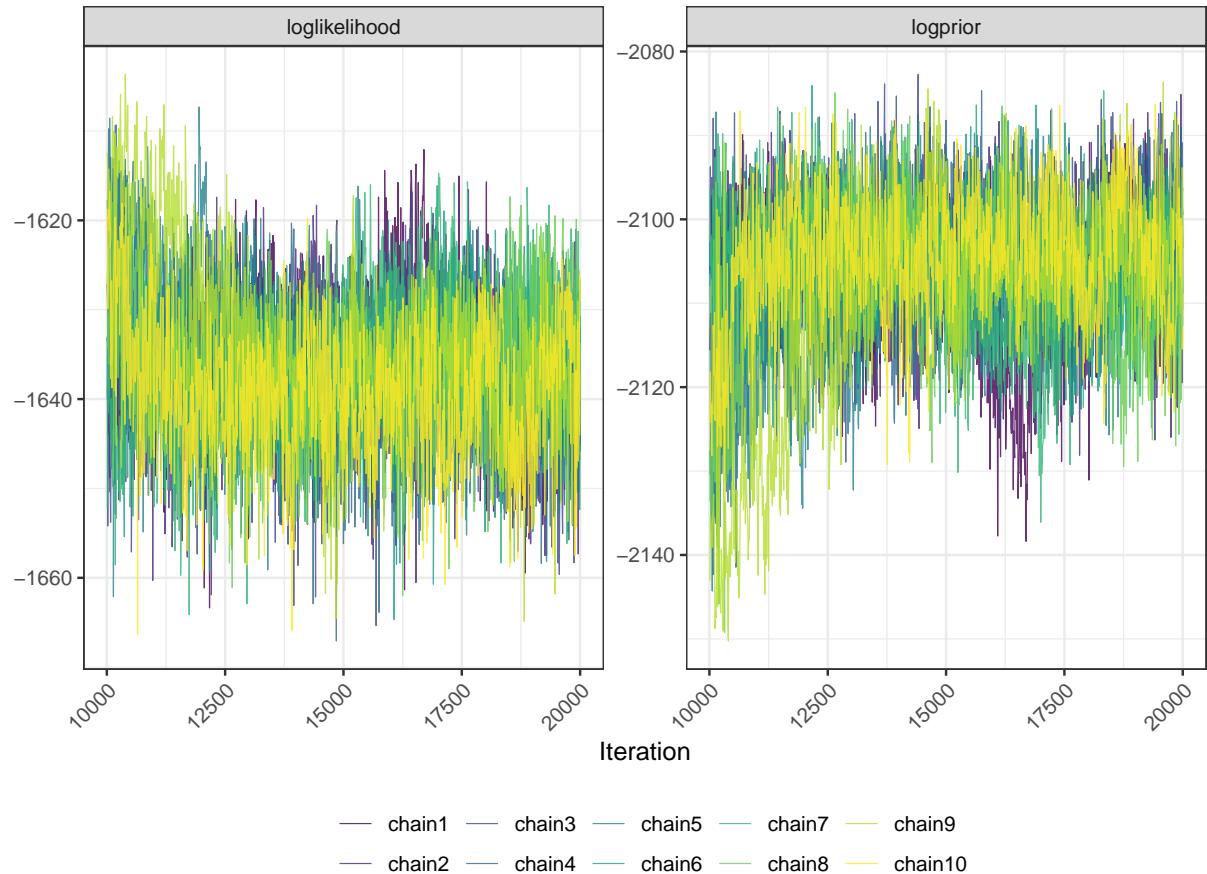
Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.2539	2.5379	55.2706	49.9524	65.2484	71.7360	990.5057	-1.7752	0.0825
x2	68.4193	70.3057	75.3661	75.5150	81.8468	89.9716	1310.6447	-3.3211	0.0016
x3	102.3816	107.4611	113.4506	113.5502	120.4786	128.3696	1967.8364	0.7152	0.3089
x4	219.0011	219.4405	226.3785	226.2131	232.6879	233.0000	2698.6782	3.9703	0.0002
y1	0.0000	0.0754	1.7055	1.8833	4.6670	6.4043	6968.3028	1.2341	0.1863
y2	0.0001	0.0534	1.5353	1.9357	5.5942	8.0028	1284.2954	2.8685	0.0065
y3	6.8486	7.6231	9.2226	9.1538	10.4589	11.0110	1071.0139	-4.2740	0.0000
y4	4.8416	6.3567	7.6547	7.6196	8.5917	9.2521	2052.2161	-0.6835	0.3158
y5	5.9262	6.3822	7.0791	7.0973	7.8709	8.5201	2737.5891	3.0083	0.0043
Ne1	0.8739	0.9444	1.0185	1.0191	1.0950	1.1767	8847.1711	0.8124	0.2868
Ne2	0.8207	0.9172	0.9947	0.9950	1.0730	1.1713	7504.6153	1.1820	0.1984
Ne3	0.8309	0.9148	0.9897	0.9901	1.0662	1.1362	9216.8908	2.1790	0.0371
Ne4	0.8573	0.9251	1.0009	1.0016	1.0802	1.1537	7344.9853	-0.7222	0.3074
Ne5	0.8654	0.9234	0.9995	1.0002	1.0779	1.1669	6136.6007	-0.2784	0.3838

NYS1 with the Potential for Seroreversion Included

Fit Diagnostics

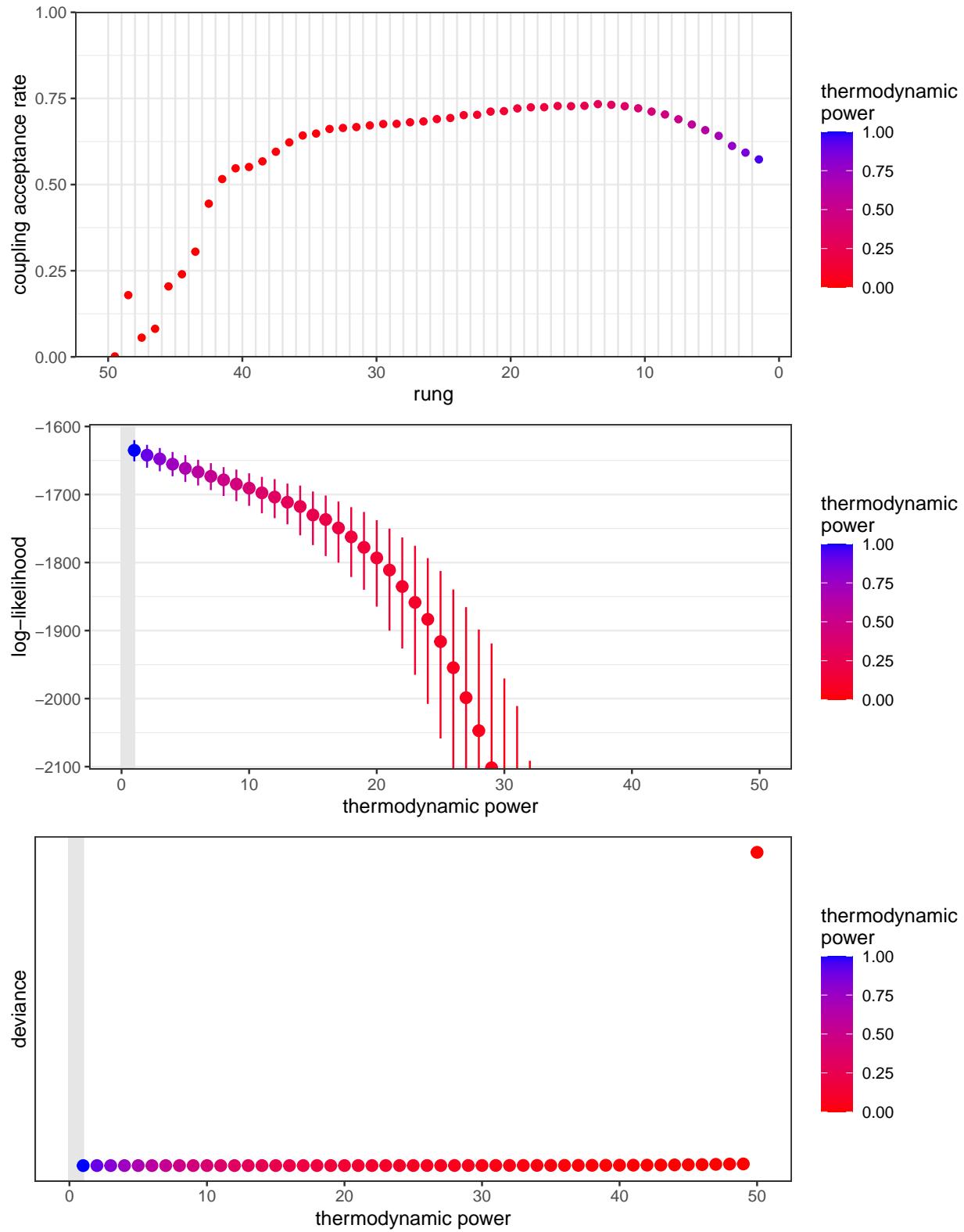
Log Likelihood & Prior Plot



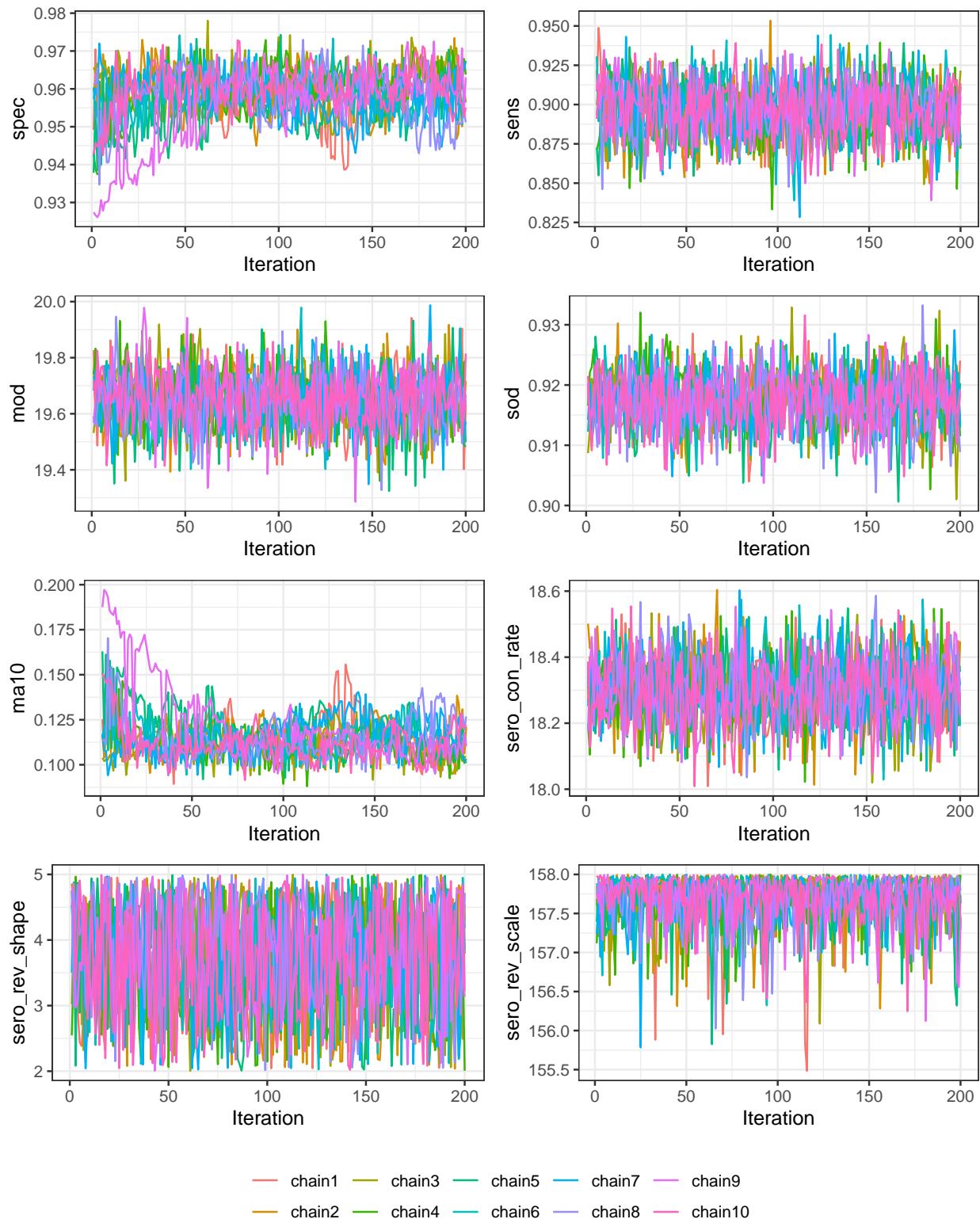
gelman_mpsrf

1.01

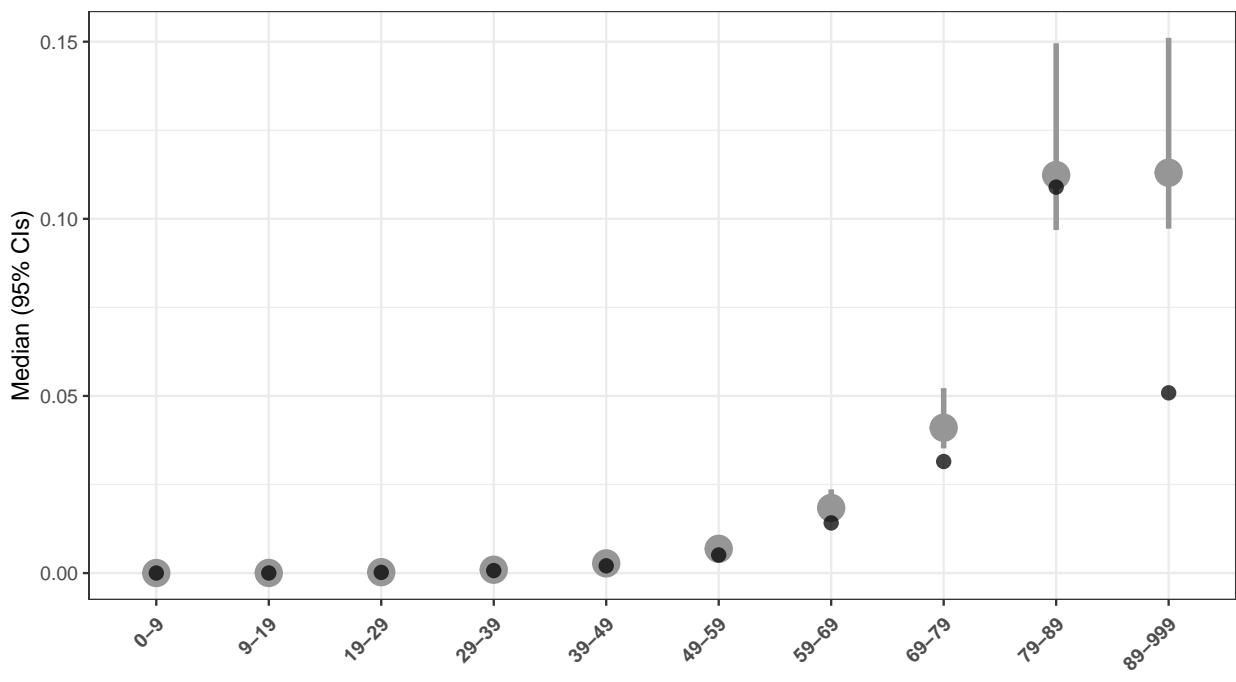
Metropolis Coupling Acceptance Plot



Serological Diagnostics

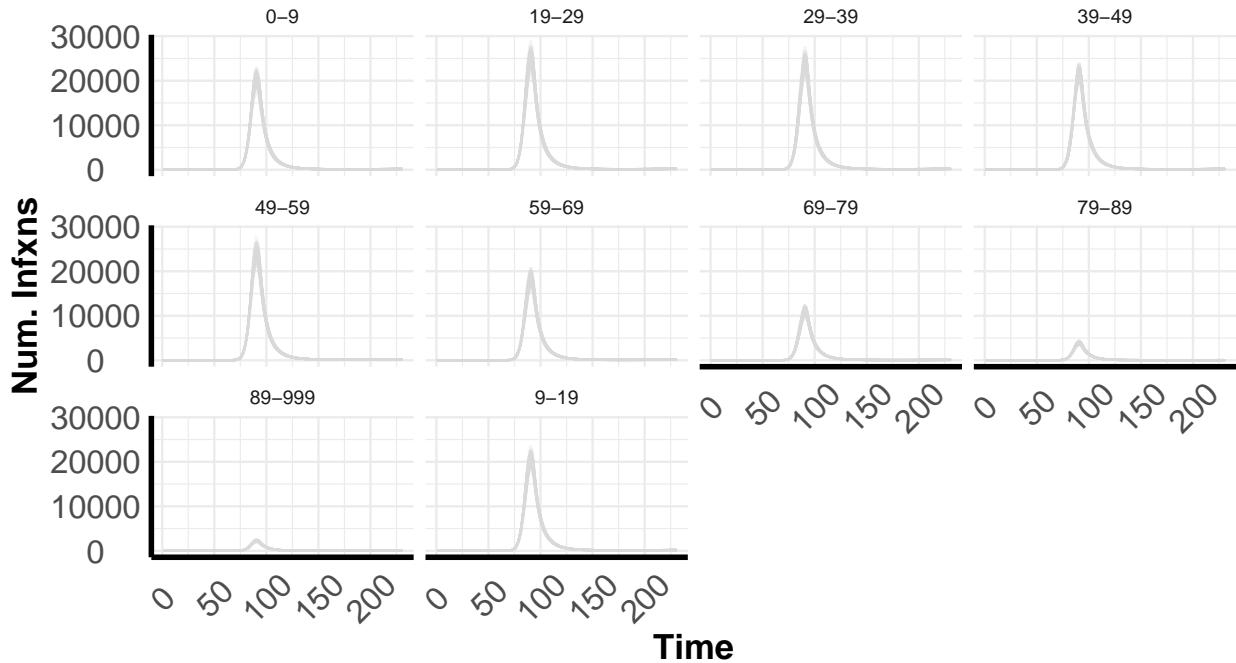


IFRs & Incidence Curve



Grey and black points represent model fits and crude IFR estimates, respectively

Posterior Draws of the Infection Curve



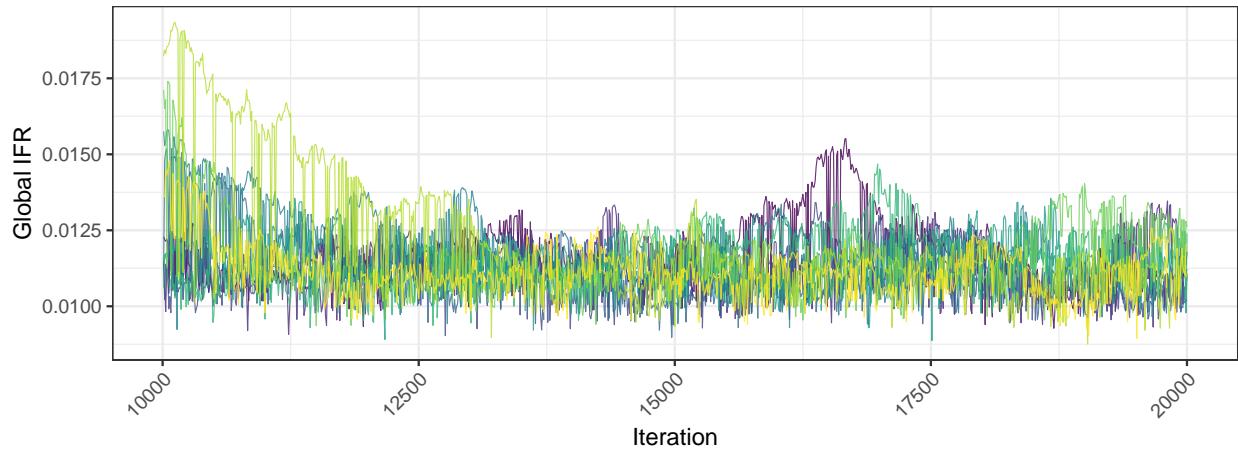
Strata IFR

strata	param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0-9	ma1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	2590.6951	-0.1145	0.3963
9-19	ma2	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	1024.2781	-0.2975	0.3817
19-29	ma3	0.0002	0.0002	0.0003	0.0003	0.0003	0.0005	227.6625	0.1646	0.3936
29-39	ma4	0.0007	0.0008	0.0009	0.0010	0.0012	0.0017	107.6141	0.2348	0.3881
39-49	ma5	0.0021	0.0023	0.0027	0.0028	0.0035	0.0051	116.5883	0.2370	0.3879
49-59	ma6	0.0053	0.0059	0.0068	0.0069	0.0088	0.0121	98.6933	0.1432	0.3949
59-69	ma7	0.0137	0.0158	0.0184	0.0187	0.0236	0.0312	103.2324	0.1586	0.3940
69-79	ma8	0.0315	0.0352	0.0410	0.0416	0.0522	0.0739	119.9948	0.2870	0.3828
79-89	ma9	0.0844	0.0968	0.1124	0.1147	0.1496	0.1970	81.4269	0.2273	0.3888
89-999	ma10	0.0846	0.0972	0.1130	0.1154	0.1511	0.1988	86.9247	0.2225	0.3892

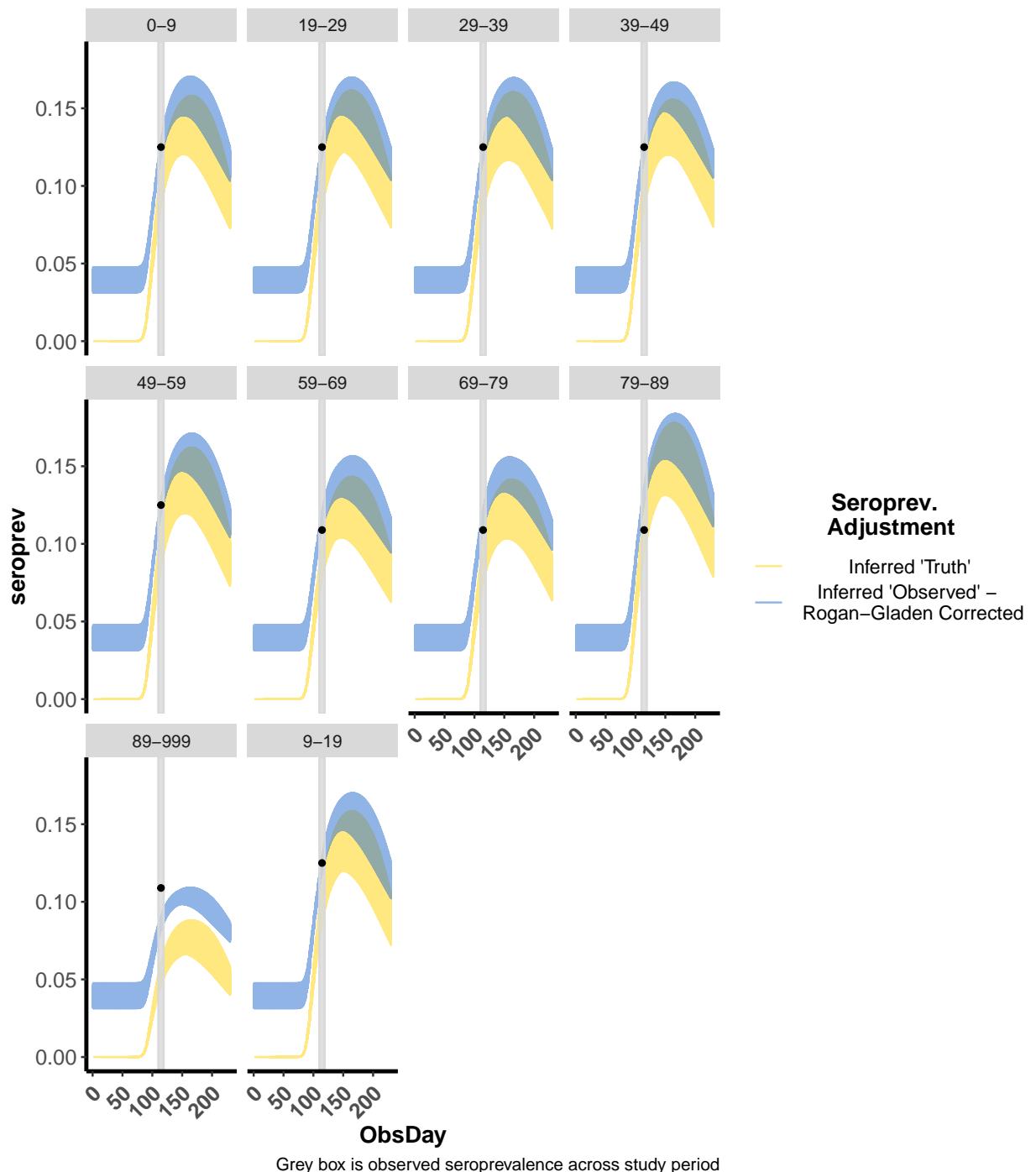
Overall IFR

min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
0.0079	0.0088	0.0101	0.0102	0.0129	0.0174	125.9694	4.4658	0

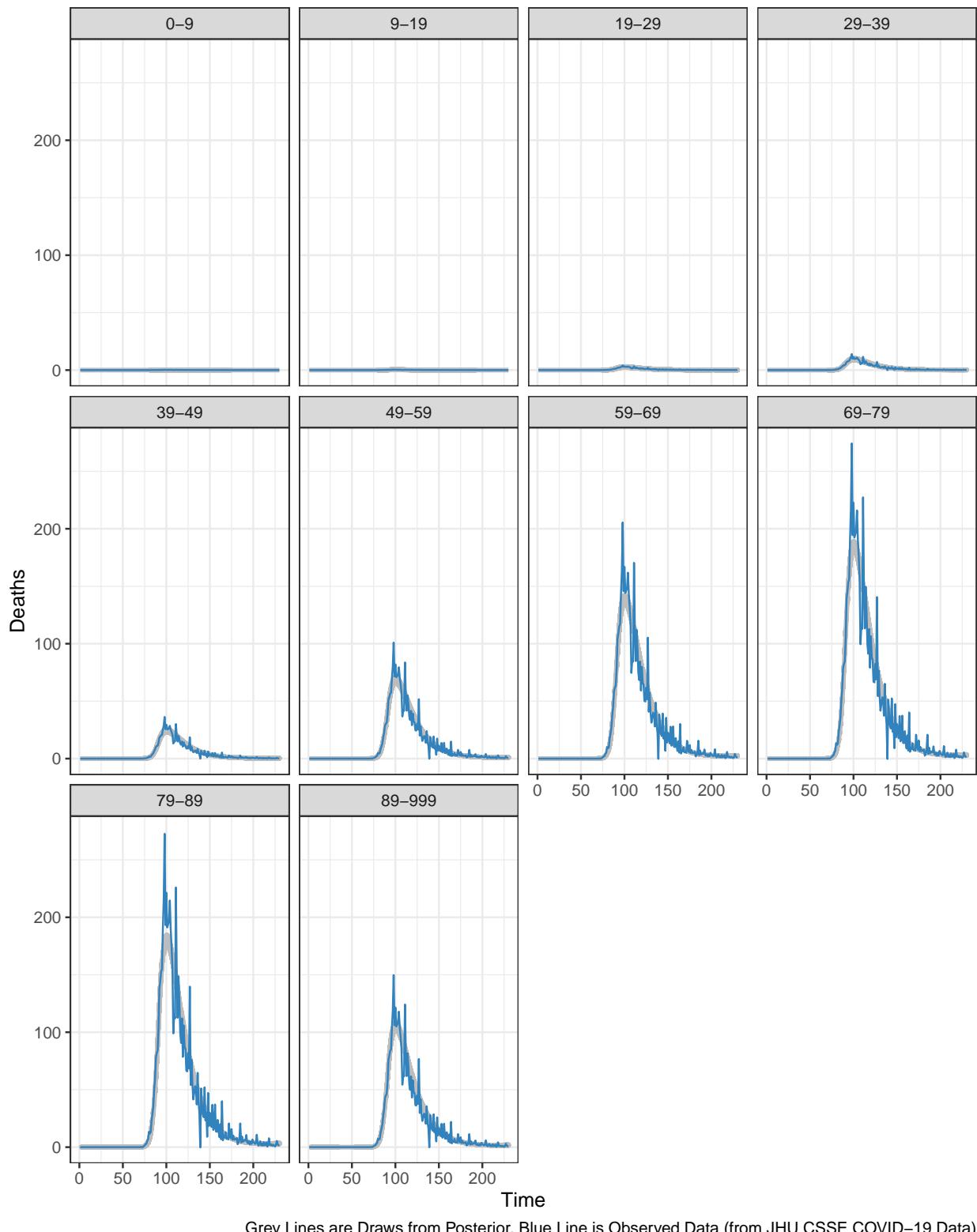
chain	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
chain1	0.0084	0.0090	0.0102	0.0104	0.0132	0.0138	11.7968	-0.9878	0.2449
chain2	0.0083	0.0087	0.0100	0.0101	0.0116	0.0121	45.2344	-0.5890	0.3354
chain3	0.0082	0.0087	0.0099	0.0099	0.0113	0.0120	21.4915	-1.2194	0.1897
chain4	0.0081	0.0088	0.0098	0.0099	0.0127	0.0140	16.7108	6.8344	0.0000
chain5	0.0085	0.0091	0.0103	0.0105	0.0128	0.0139	14.0307	8.9427	0.0000
chain6	0.0080	0.0090	0.0103	0.0102	0.0114	0.0121	34.3178	2.1587	0.0388
chain7	0.0083	0.0089	0.0102	0.0103	0.0119	0.0133	15.9374	-6.1169	0.0000
chain8	0.0084	0.0089	0.0100	0.0103	0.0126	0.0152	15.2215	1.5483	0.1203
chain9	0.0079	0.0088	0.0102	0.0108	0.0160	0.0174	4.6016	9.0995	0.0000
chain10	0.0080	0.0088	0.0099	0.0100	0.0121	0.0127	18.8701	3.6650	0.0005



Seroprevalence Observed vs. Inferred True Prev



Death Posterior Predictive Check



Additional Parameters

param	min	LCI	median	mean	UCI	max	ESS	GewekeZ	GewekeP
x1	1.0585	1.2128	58.9930	52.1377	68.3556	72.6996	157.5036	1.2823	0.1753
x2	88.8374	90.8231	92.6090	92.5677	94.0105	94.6069	176.9153	-1.5649	0.1173
x3	93.4070	94.3889	95.5219	95.5815	97.1966	98.3651	247.7559	0.6650	0.3198
x4	219.0001	219.0349	219.9659	220.3835	224.6151	232.7664	474.6616	-0.7967	0.2905
y1	0.0003	0.0682	1.4437	1.6524	4.6417	5.7558	348.0335	-2.7017	0.0104
y2	0.0000	0.0902	1.9071	2.3339	5.9089	7.6188	118.5148	-0.7034	0.3115
y3	11.4476	11.6840	11.9465	11.9362	12.1067	12.2403	97.6376	0.2009	0.3910
y4	10.9002	11.2836	11.5949	11.5817	11.8018	11.9523	150.7666	-0.5047	0.3512
y5	6.4473	6.8376	7.1269	7.1212	7.3712	7.6396	183.3540	-0.7714	0.2963
Ne1	0.9090	0.9661	1.0354	1.0352	1.1053	1.1751	7966.6487	0.8081	0.2878
Ne10	0.5004	0.5215	0.5632	0.5630	0.6031	0.6344	622.5114	-0.2169	0.3897
Ne2	0.8915	0.9645	1.0346	1.0346	1.1036	1.1652	8420.9415	0.1440	0.3948
Ne3	0.8969	0.9665	1.0341	1.0343	1.1045	1.1719	7107.0148	1.9252	0.0625
Ne4	0.9168	0.9663	1.0344	1.0348	1.1037	1.1981	6844.2550	-0.2024	0.3909
Ne5	0.8984	0.9664	1.0345	1.0351	1.1053	1.1874	5392.8910	0.5903	0.3351
Ne6	0.9014	0.9660	1.0358	1.0362	1.1061	1.1718	3787.8684	1.2248	0.1884
Ne7	0.7906	0.8589	0.9322	0.9325	1.0077	1.0765	2039.7375	0.6363	0.3258
Ne8	0.7889	0.8583	0.9304	0.9312	1.0076	1.0920	1386.1557	-0.3665	0.3730
Ne9	1.0133	1.0752	1.1477	1.1477	1.2177	1.2827	844.6463	-0.1706	0.3932