

Table S2: Simulation Study Results for Deterministic Coalescent Trees

η	Inference	Truth	Mean	Median	Error	Bias	Relative HPD width	95% HPD accuracy
\mathcal{R}_0	Stoch.Coal.SIR	2.50	2.44	2.37	0.06	-0.05	0.67	100.00%
	Deter.Coal.SIR	2.50	2.51	2.46	0.08	-0.01	0.59	99.00%
γ	Stoch.Coal.SIR	0.30	0.33	0.31	0.07	0.05	1.00	100.00%
	Deter.Coal.SIR	0.30	0.32	0.30	0.10	0.02	0.79	100.00%
$\tilde{S}_{(0)}$	Stoch.Coal.SIR	999	1586	1142	0.26	0.20	3.83	100.00%
	Deter.Coal.SIR	999	1426	1030	0.36	0.13	3.03	100.00%
$z_{(0)}$	Stoch.Coal.SIR	44.12	45.52	44.74	0.02	0.01	0.19	93.00%
	Deter.Coal.SIR	44.12	44.34	44.11	0.02	1.93E-3	0.08	92.00%