

S1 Table. Parameters and estimates by data source. Estimates from analysis based on published secondary infection distributions based on data from across West Africa [1], from Western Area, Sierra Leone [2], and from Conakry, Guinea [3-4].

	Full outbreak	Sierra Leone	Guinea
R₀	~unif(1, 1.5)	~logNormal(ln(2.39),0.09)	~logNormal(ln(0.95),0.09)
Dispersion (k)	~unif(0.03,0.52)	~normal(0.37, 0.025)	~normal(0.18, 0.025)
Median number of undetected outbreaks since 1976 (range)	67 (35-283)	26 (15-37)	118.5 (75-192)
Median number of undetected ‘dead-end’ spillovers since 1976 (range)	56 (28-263)	22 (14-31)	101.5 (64-161)
Median outbreak detection probability (range)	26.4% (7.8-40.7%)	48.0% (39.3-61.5%)	16.8% (11.1-24.2%)
Median ‘dead-end’ spillover detection probability (range)	3.4% (0.1-6.7%)	8.3% (6.0-12.5%)	1.9% (1.2-3.0%)

[1] International Ebola Response Team, Agua-Agum J, Ariyaratnam A, Aylward B, Bawo L, Bilivogui, P, et al. Exposure patterns driving Ebola transmission in West Africa: A retrospective observational study. *PLoS Med.* 2016;13(11):1–23.

[2] Lau MSY, Dalziel BD, Funk S, McClelland A, Tiffany A, Riley S, et al. Spatial and temporal dynamics of superspreading events in the 2014–2015 West Africa Ebola epidemic. *Proc Nat Acad Sci.* 2017;114(9):2337–2342.

[3] Althaus CL. Ebola superspreading. *Lancet Inf Dis.* 2015;15(5):507–508.

[4] Faye O, Boëlle PY, Heleze E, Faye O, Loucoubar C, Magassouba N, et al. Chains of transmission and control of Ebola virus disease in Conakry, Guinea, in 2014: An observational study. *Lancet Inf Dis.* 2015;15(3):320–326.