

**S1 Table. Deviance information criterion values for the cattle, sheep and goat models with literature informed and vague uniform priors for test sensitivity and specificity, with and without the covariance parameterisation.**

Model parameter	Species model					
	Cattle		Sheep		Goat	
	Literature informed priors	Vague priors	Literature informed priors	Vague priors	Literature informed priors	Vague priors
With covariance	34.03	33.87	34.83	33.55	35.22	34.99
Without covariance	34.32	34.07	37.50	35.86	40.61	39.67

Literature informed estimates were generated using a literature search of scientific publications from 1999-2019. Cattle estimates were calculated from studies based in Africa, sheep and goat estimates were calculated from studies from varied geographic locations. Vague priors were specified as  $\text{dbeta}(1,1)$ . DIC is the deviance information criterion.