1028   Additional file 9 — Final model for multi-site RCTs

$$\text{logit}\left(P\left(Y_{kmi} \geq y\right)\right) = \alpha + \tau_{ykm} + \boldsymbol{\beta}\boldsymbol{X}_{kmi} + \delta_{m_k} A_{kmi}$$

$$\alpha \sim \text{Normal}\left(\mu = 0, \sigma = 0.1\right)$$

$$\tau_{ykm} \sim t_{\text{student}}\left(\text{df} = 3, \mu = 0, \sigma = 10\right)$$

$$\boldsymbol{\beta} \sim \text{Normal}\left(\boldsymbol{\mu} = \mathbf{0}, \Sigma = 2.5^2 I_{p \times p}\right)$$

$$\delta_{m_k} \sim \text{Normal}\left(\mu = \delta_{k_c}, \sigma = 0.1\right) \tag{A3}$$

$$\delta_{k_c} \sim \text{Normal}\left(\mu = \delta_c, \sigma = \eta\right)$$

$$\eta \sim t_{\text{student}}\left(\text{df} = 3, \mu = 0, \sigma = 0.25\right)$$

$$\delta_c \sim \text{Normal}\left(\mu = -\Delta_{co}, \sigma = 0.1\right)$$

$$-\Delta_{co} \sim \text{Normal}\left(\mu = 0, \sigma = 0.354\right).$$

1029   The parameters in the extended models that were in common with the basic model were set to the prior distributions

1030   of the final version in model (7). The extended co model (A3) incorporates new parameters: τ_{ykm}, and δ_{m_k}, which

1031   were selected via simulations as those described in Section Extended model for multi-site RCTs. The site-specific

1032   intercept τ_{ykm} was set with prior t_{student} ($\text{df} = 3, \mu = 0, \sigma = 10$). The mth site-specific "control effect" δ_{m_k} was

1033   chosen to be normally distributed around a RCT-specific "control effect" δ_{k_c}, with a standard deviation 0.1.