Posterior Predictive Check Linearity Model-predicted lines should resemble observed data line Reference line should be flat and horizontal 0.04 0.2 0.03 Residuals Density 0.0 0.02 0.01 -0.20.00 -0.4150 50 100 200 2.5 3.5 4.0 4.5 3.0 log1p(labs_ggt) Fitted values Observed data — Model-predicted data Homogeneity of Variance Influential Observations Points should be inside the contour lines Reference line should be flat and horizontal 1.5 √|Std. residuals| Residuals 1.0 0 0.5 Std. -2 4.5 0.25 2.5 3.0 3.5 4.0 5.0 0.00 0.50 0.75 Fitted values Leverage (hii) Collinearity Normality of Residuals Dots should fall along the line High collinearity (VIF) may inflate parameter uncertainty Sample Quantile Deviation Variance Inflation Factor (VIF, log-scaled) 10 0.2 -0.2-0.2 -0.40.0 0.2 0.4 allocation_group allocation_group:visit visit Standard Normal Distribution Quantiles Low (< 5) Normality of Random Effects (record_id) Dots should be plotted along the line RE Quantiles 1

0

0 **Theoretical Quantiles**