Posterior Predictive Check
Model-predicted lines should resemble observed data line
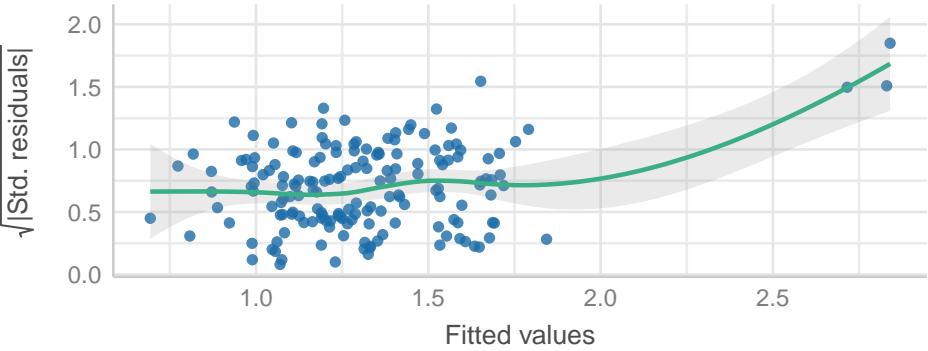
Density vs log1p(labs_homa_ir)

— Observed data — Model-predicted data
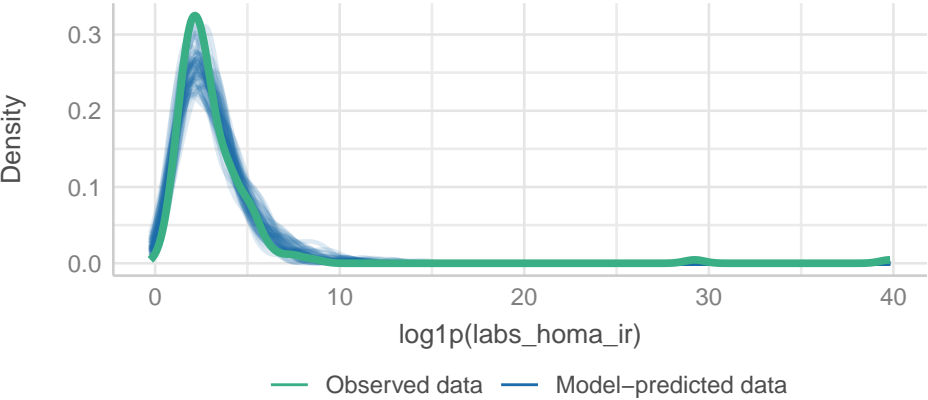
Linearity
Reference line should be flat and horizontal

Residuals vs Fitted values
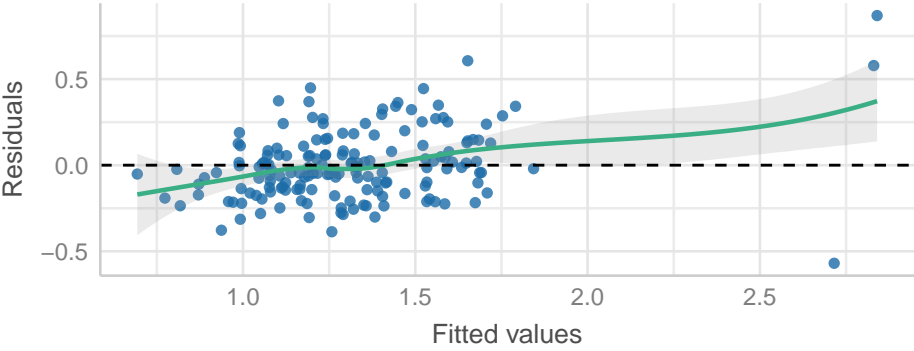
Homogeneity of Variance
Reference line should be flat and horizontal

$\sqrt{|\text{Std. residuals}|}$ vs Fitted values

Influential Observations
Points should be inside the contour lines

Std. Residuals vs Leverage (h_{ii})
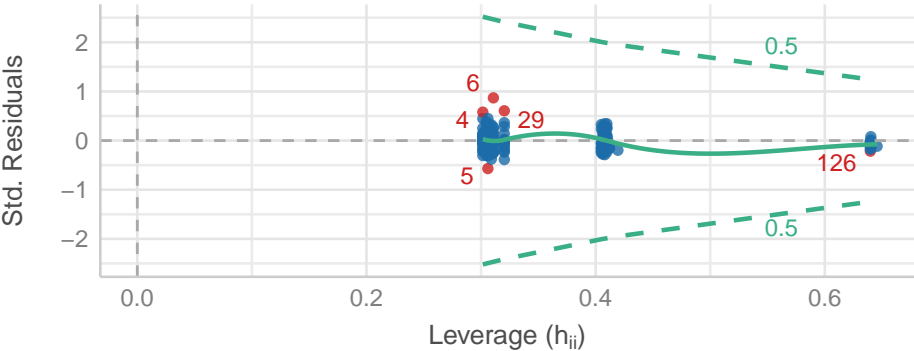
Collinearity
High collinearity (VIF) may inflate parameter uncertainty

Variance Inflation Factor (VIF, log-scaled)

allocation_group   allocation_group:visit   visit

— Low (< 5)
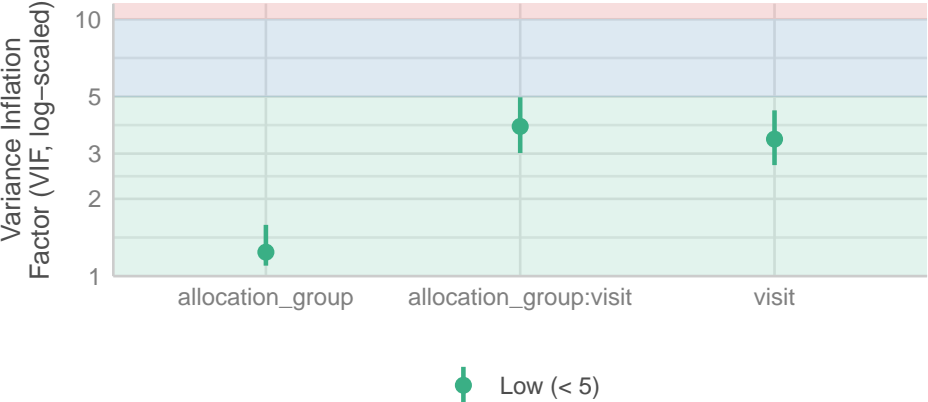
Normality of Residuals
Dots should fall along the line

Sample Quantile Deviations vs Standard Normal Distribution Quantiles
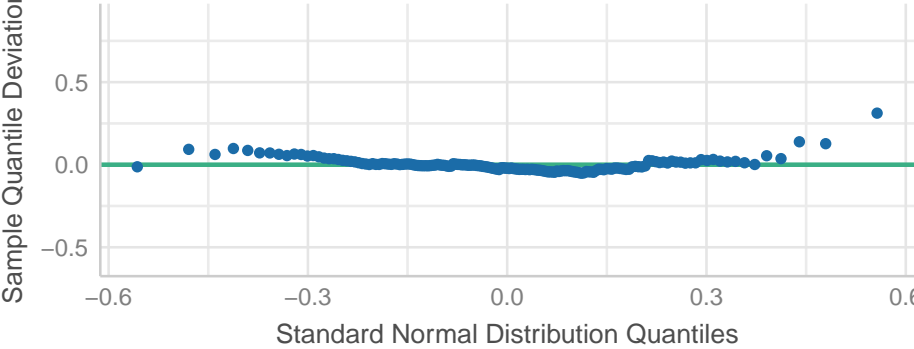
Normality of Random Effects (record_id)
Dots should be plotted along the line

RE Quantiles vs Theoretical Quantiles