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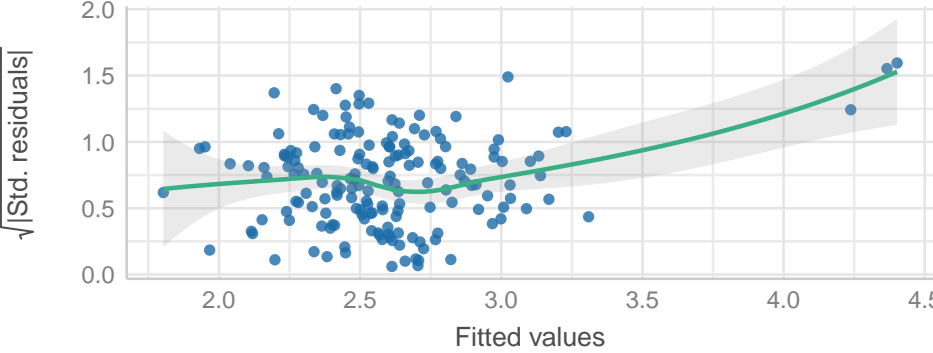
Density vs log1p(labs_insulin)

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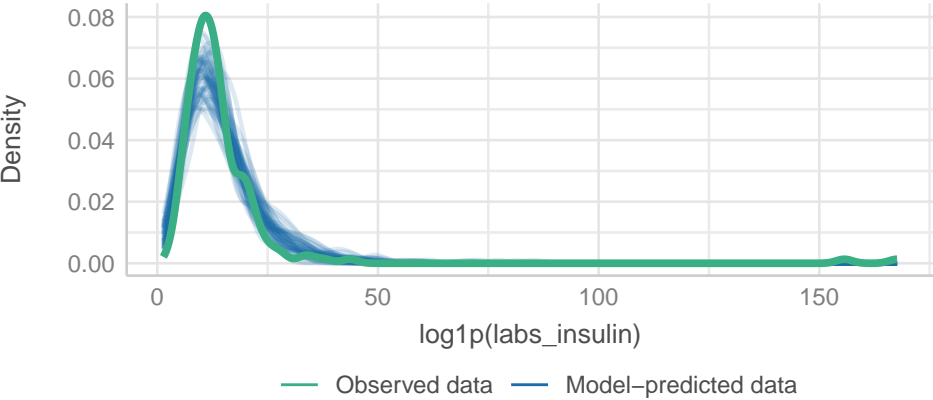
Linearity
Reference line should be flat and horizontal

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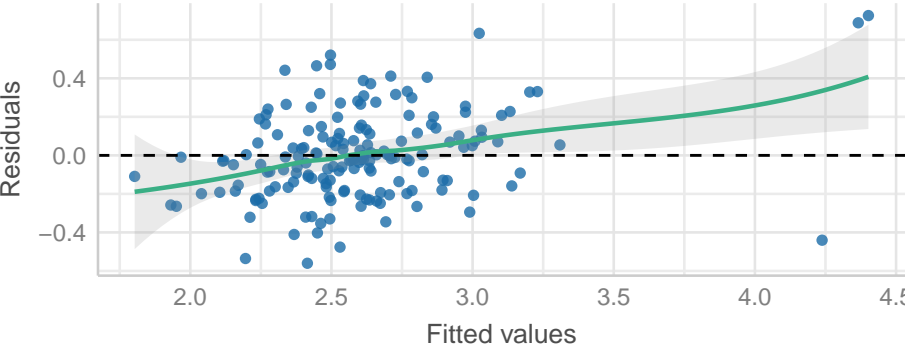
Homogeneity of Variance
Reference line should be flat and horizontal

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

Influential Observations
Points should be inside the contour lines

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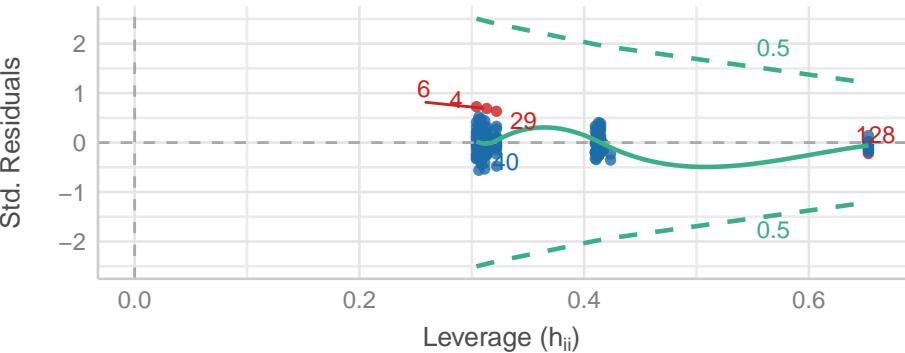
Collinearity
High collinearity (VIF) may inflate parameter uncertainty

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
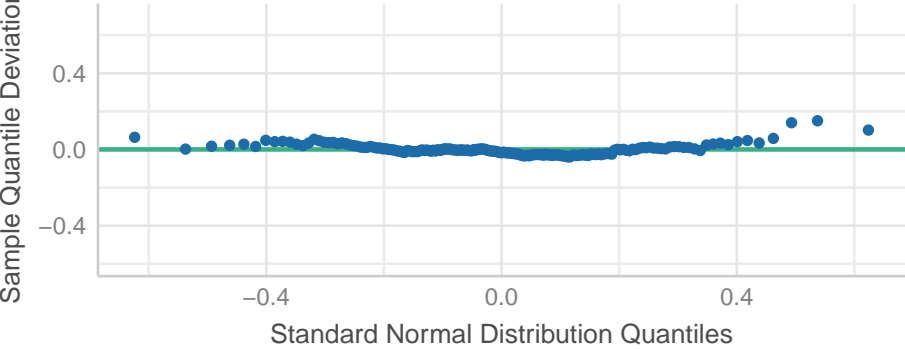
Normality of Random Effects (record_id)
Dots should be plotted along the line

RE Quantiles vs Theoretical Quantiles