Appendix A

Variance Estimates assuming that baseline and follow-up treatment variance is equal

ANCOVA

For a reasonably sized RCT, the variance of $\hat{\beta}$ from equation (1), is approximately

$$\left\{\frac{1}{n_1}+\frac{1}{n_2}\right\}\sigma^2(1-\rho_{01}^2)$$

where ρ_{01} is the within subject correlation between baseline and follow-up measurements.

LDA model

The variance of this estimate $\hat{\delta}$ from equation (2) ($\sigma_0^2=\sigma_1^2=\sigma^2$) can be written as,

$$\left\{\frac{1}{n_1}+\frac{1}{n_2}\right\}2\sigma^2(1-\rho_{01})$$

We could also estimate the treatment difference at follow-up (POST only) between the treatment arms which is $\left(\hat{\gamma}+\hat{\delta}\right)$. The variance of this estimate $\left(\hat{\gamma}+\hat{\delta}\right)$ is then

$$\left\{\frac{1}{n_1}+\frac{1}{n_2}\right\}2\sigma_1^2$$

cLDA Model

The variance of this estimate $\hat{\delta}'$ from equation (3) is then (11, 12)

$$\left\{\frac{1}{n_1}+\frac{1}{n_2}\right\}\sigma_1^2(1-\rho_{01}^2)$$