A SIMPLE META-ANALYSIS FOR A BINARY SURROGATE ENDPOINT USING DATA FROM EACH RANDOMIZATION GROUP

Stuart G. Baker¹

¹National Institutes of Health, Bethesda, USA

Email: *sb16i@nih.gov*

The key idea is that each arm of each previous trial with a surrogate and true endpoint contributes information for predicting the effect of surrogate endpoint on true endpoint in a new trial. This idea has two important consequences. First one can easily show that a strong association between a surrogate and true endpoint is not sufficient for the effect of intervention on surrogate endpoint to be a good predictor of the effect of intervention on true endpoint. Second the differences between randomization groups in the predicted effect of the surrogate endpoint on true endpoint can be combined over previous trials using a simple meta-analysis. The result is a surrogate-based estimate of the predicted effect of intervention on true endpoint in the new trial. Validation involves comparing the average prediction error of the aforementioned approach with the average prediction error of a standard meta-analysis using only true endpoints in previous trials and with the average clinically meaningful difference in true endpoints implicit in the trials.