Web-based Supporting Materials for: Analytic Methods for Individually Randomized Group Treatment Trials and Group-Randomized Trials When Subjects Belong to Multiple Groups

Rebecca. R. Andridge^a, Abigail B. Shoben^a, Keith E. Muller^b, David M. Murray^c

^a Division of Biostatistics, College of Public Health, The Ohio State University, Columbus, OH, 43210

^b Department of Health Outcomes and Policy, College of Medicine, University of Florida, Gainesville, FL, 32610

 c Division of Intramural Population Health Research, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Rockville, MD 20892

Supplementary Table 1: Summary of Type I error simulation with N = 864 and 6 B groups, with balanced allocation of subjects to B groups. Results are displayed as the number (%) of cells in simulation experiment where type I error was significantly below or above the nominal 5% based on simulation error bounds, and the range of observed type I error rates.

	Model	Below	Above	Type I Error Range
$n_B = 6$	AB (KR nobound)	7 (22%)	8 (25%)	1.4-11.9
	AB (KR bound)	18~(56%)	0 (0%)	1.6-5.8
	A (KR nobound)	0 (0%)	14~(44%)	3.7 - 52.8
	A (emp)	0 (0%)	32~(100%)	7.4-61.2
	B (KR nobound)	1 (3%)	17~(53%)	3.4 - 53.5
	B (emp)	0 (0%)	32~(100%)	7.1-61.7
	IND	0 (0%)	28~(88%)	4.9-72.5



Supplementary Figure 1: Empirical type I error when $n_B = 6$ (number of B groups equal to number of A groups) for analytic models AB(KR bound) (•), AB(KR nobound) (•): Results from larger sample size of N = 864.

 $\mathbf{2}$



Supplementary Figure 2: Empirical power when $\rho_A = 0$ (no ICC due to A groups) for analytic models AB(KR bound) (•), AB(KR nobound) (•): Results from larger sample size of N = 864.

 $ICC_A = 0$