Mean-squared error of estimators of the natural direct effect under an incremental propensity score intervention (1000 simulations each; several sample sizes) Misspecified Substitution Est (G & M w/ intercept) 0.020 Misspecified Substitution Est (G & M w/ intercept) Misspecified Substitution Est (G & M w/ intercept) 0.015 Mean-squared error (MSE) 0.005 Efficient Est (G w/ intercept; E, M w/ HAL) Efficient Est (M w/ intercept; E, G, w/ HAL) Reweighted Est (G & E w/ HAL Substitution Est (G & M w/ HAL) Misspecified Reweighted Est (G & E w/ intercept) Efficient Est (G, E, M w/ HAL) Efficient Est (G w/ intercept; E, M w/ HAL) Misspecified Efficient Est (G, E, M w/ intercept) Efficient Est (G w/ intercept; E, M w/ HAL) Misspecified Reweighted Est (G & E w/ intercept) Reweighted Est (G & E w/ HAL ed Efficient Est (G, E, M Misspecified Reweighted Est (G & E w/ intercept) Efficient Est (E w/ intercept; G, M w/ HAL) Misspecified Efficient Est (G, E, M w/ intercept) Efficient Est (M w/ intercept; E, G, w/ HAL) Substitution Est (G & M w/ HAL) Substitution Est (G & M w/ HAL) ficient Est (M w/ intercept; E, G, w/ HAL) 0.000 Efficient Est (G, E, M w/ HAL) Reweighted Est (G & E w/ HAL Efficient Est (E w/ intercept; G, M w/ HAL) Efficient Est (G, E, M w/ HAL) Efficient Est (E w/ intercept; G, M w/ HAL) 10000 500 2000

Sample Size