Under null hypothesis that $\mu_p=0$ and $\sigma_p=5$ 1.00 0.75 Method Type I Error ightharpoonup Robust mixture prior (w = 0.5) Robust mixture prior (w=0.9) Profile Bayesian Regular Bayesian Frequentist 0.25 0.00 100 200 300 400 500 Pediatric Sample size

Under null hypothesis that $\mu_p = 0$ and $\sigma_p = 7$ 1.00 0.75 Method Type I Error ightharpoonup Robust mixture prior (w = 0.5) Robust mixture prior (w=0.9) Profile Bayesian Regular Bayesian Frequentist 0.25 0.00 100 200 300 400 500 Pediatric Sample size

Under null hypothesis that $\mu_p=0$ and $\sigma_p=10$ 1.00 0.75 Method Type I Error ightharpoonup Robust mixture prior (w = 0.5) Robust mixture prior (w=0.9) Profile Bayesian Regular Bayesian Frequentist 0.25 0.00 100 200 300 400 500 Pediatric Sample size

Under alternative hypothesis that $\mu_p = 0.8$ and $\sigma_p = 7$ 1.00 0.75 Method ightharpoonup Robust mixture prior (w = 0.5) Power 0.50 Robust mixture prior (w=0.9) Profile Bayesian Regular Bayesian Frequentist 0.25 0.00 100 200 300 400 500 Pediatric Sample size

Under alternative hypothesis that $\mu_p = 1$ and $\sigma_p = 7$ 1.00 0.75 Method ightharpoonup Robust mixture prior (w = 0.5) Power → Robust mixture prior (w=0.9) Profile Bayesian 0.50 Regular Bayesian Frequentist 0.25 100 200 300 400 500 Pediatric Sample size

Under alternative hypothesis that $\mu_p=1.5$ and $\sigma_p=7$ 1.00 0.75 Method ightharpoonup Robust mixture prior (w = 0.5) → Robust mixture prior (w=0.9) Profile Bayesian Regular Bayesian Frequentist 0.50 0.25 100 200 300 400 500 Pediatric Sample size

Power



