Estimated vaccine efficacy v. symptomatic COVID-19 infection at Day 57 working MSM summary: $(\hat{\beta}_{TMLE} = 0.2024, p-value = 1e-04)$ infection 00.1 symptomatic against 0 <u>5</u> Stochastic interventional Posited change in standardized spike protein binding antibody

Stochastic interventional vaccine efficacy v. COVID-19 infection across standardized shifts in spike protein binding antibody levels, summarized by projection of causal dose-response curve on a linear working model.