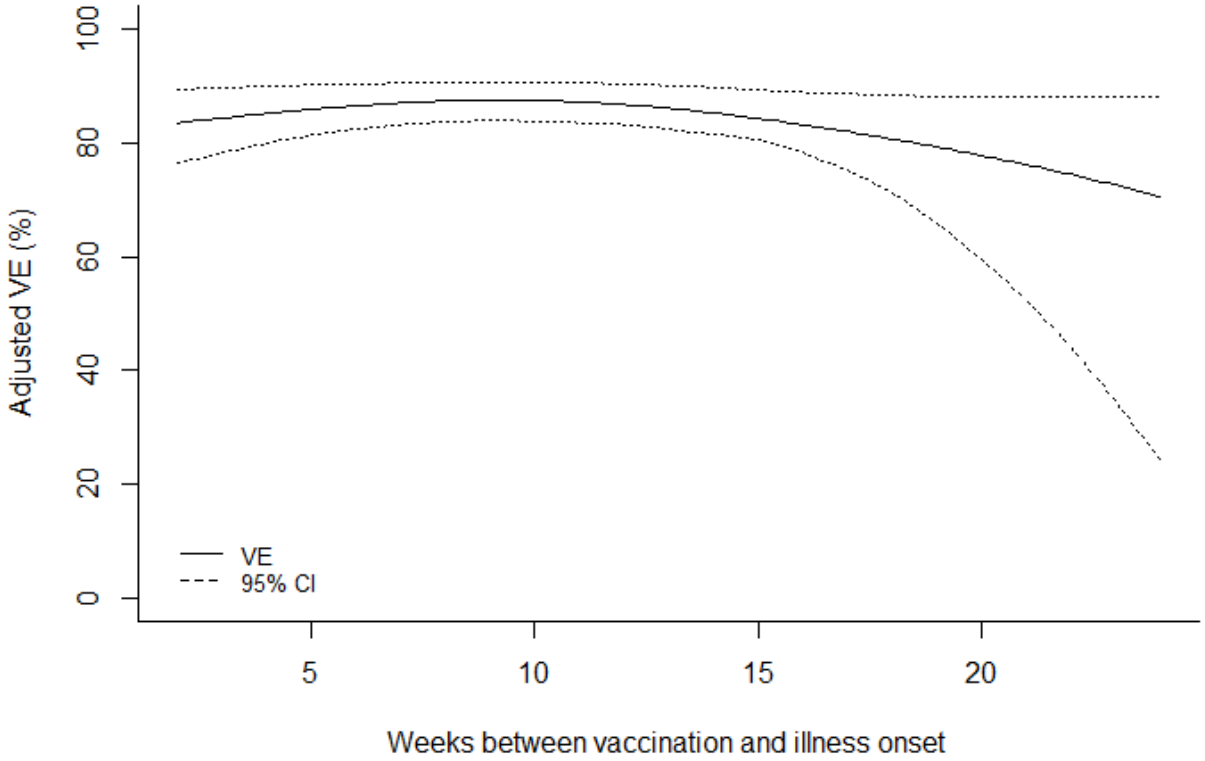
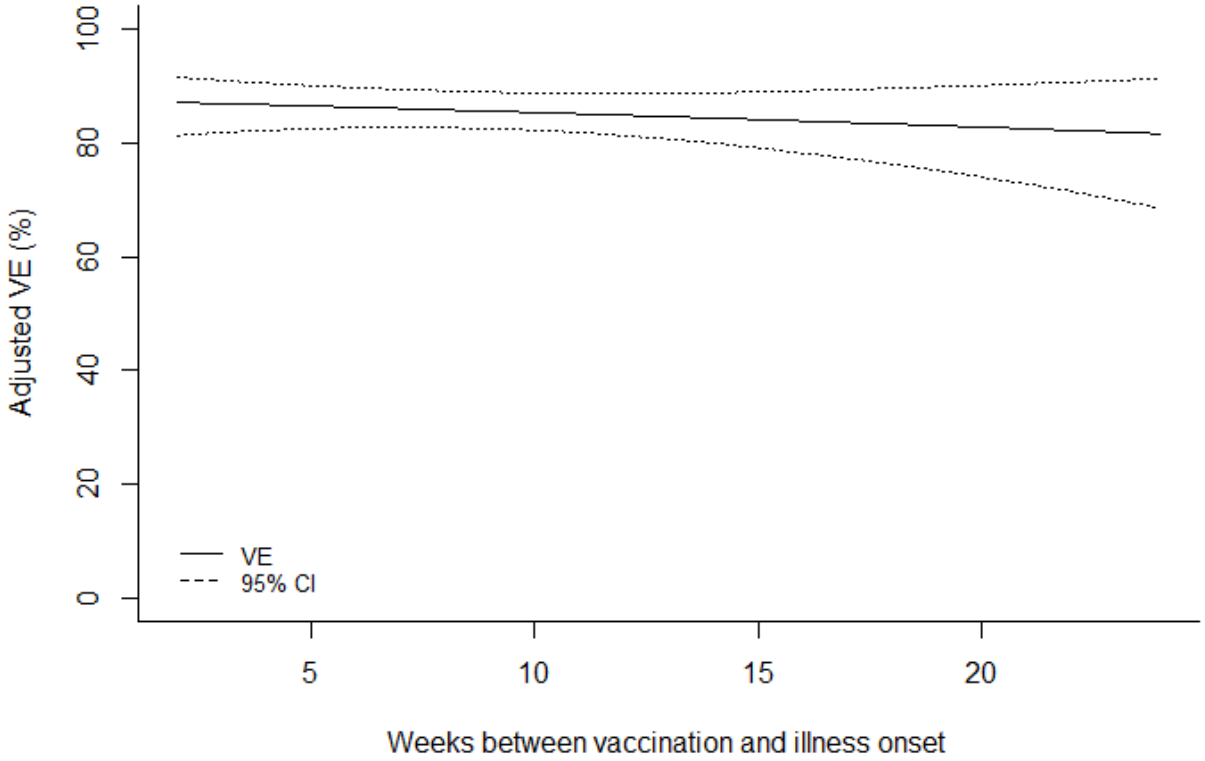
SUPPLEMENTARY FIGURE 1. Adjusted vaccine effectiveness* against COVID-19 hospitalization based on a natural cubic spline model among hospitalized adults by time since second dose of mRNA vaccine – 21 academic medical centers in 18 states,† March–July 2021.



* Vaccine effectiveness was estimated using logistic regression comparing the odds of being fully vaccinated with an authorized mRNA COVID-19 vaccine versus unvaccinated in case patients and controls using the equation VE = 100 × (1 – odds ratio). Models were adjusted for date of hospital admission (biweekly intervals), Health and Human Services region of hospital, age category (18-49, 50-64, ≥65 years), sex, and race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic of any race, non-Hispanic Other, or unknown race and ethnicity). Time since second dose of mRNA vaccine was added to the model as a natural cubic spline term with a knot at the median time and boundary knots at the 10th and 90th percentiles. The solid line represents the estimated VE based on the model and the dotted lines represent 95% confidence intervals based on bootstrapping with 1000 replications.

† Hospitals by region included *Northeast*: Baystate Medical Center (Springfield, Massachusetts), Beth Israel Deaconess Medical Center (Boston, Massachusetts), Montefiore Medical Center (Bronx, New York); *South*: Vanderbilt University Medical Center (Nashville, Tennessee), University of Miami Medical Center (Miami, Florida), Emory University Medical Center (Atlanta, Georgia), Johns Hopkins Hospital (Baltimore, Maryland), Wake Forest University Baptist Medical Center (Winston-Salem, North Carolina), Baylor Scott and White Health (Temple, Texas); *Midwest*: University of Iowa Hospitals (Iowa City, Iowa), University of Michigan Hospital (Ann Arbor, Michigan), Hennepin County Medical Center (Minneapolis, Minnesota), Barnes-Jewish Hospital (St. Louis, Missouri), Cleveland Clinic (Cleveland, Ohio), Ohio State University Wexner Medical Center (Columbus, Ohio); *West*: Stanford University Medical Center (Stanford, California), UCLA Medical Center (Los Angeles, California), UCHealth University of Colorado Hospital (Aurora, Colorado), Oregon Health & Sciences University Hospital (Portland, Oregon), Intermountain Medical Center (Murray, Utah), University of Washington (Seattle, Washington).

SUPPLEMENTARY FIGURE 2. Adjusted vaccine effectiveness* against COVID-19 hospitalizations based on a linear model among hospitalized adults by time since second dose of mRNA vaccine – 21 academic medical centers in 18 states, March–July 2021



* Vaccine effectiveness was estimated using logistic regression comparing the odds of being fully vaccinated with an authorized mRNA COVID-19 vaccine versus unvaccinated in case patients and controls using the equation VE = 100 × (1 – odds ratio). Models were adjusted for date of hospital admission (biweekly intervals), Health and Human Services region of hospital, age category (18-49, 50-64, ≥65 years), sex, and race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic of any race, non-Hispanic Other, or unknown race and ethnicity). Time since second dose of mRNA vaccine was added to the model as a linear term. The solid line represents the estimated VE based on the model and the dotted lines represent 95% confidence intervals based on bootstrapping with 1000 replications.