

## Final Abstract – Gabriella Alicea

### Disparities in COVID-19 Vaccine Coverage in Wisconsin Farm Children and Adolescents

**Background:** SARS-CoV-2 (COVID-19) infections have resulted in over 1 million deaths in the United States. Risks are severely elevated in unvaccinated individuals, thus it is crucial to understand community patterns of COVID-19 vaccination, particularly in younger and remote populations where vaccination rates lag. This study examined disparities in COVID-19 vaccine coverage in farm children and adolescents in north-central Wisconsin.

**Methods:** A cross-sectional analysis was conducted in patients of the Marshfield Clinic Health System (MCHS) in north-central Wisconsin. The sample included children/adolescents who were age-eligible for the COVID-19 vaccine for  $\geq 90$  days (as of May 2022), stratified by those who live vs. do not live on a farm, per linked agricultural data from state and commercial sources. Outcomes included COVID-19 vaccine initiation, series completion, and booster receipt from a regional vaccine registry. Sociodemographic and clinical covariates (e.g., age, sex, race, chronic conditions) were extracted from electronic health records. Multivariable regression was used to examine associations between farm residence and COVID-19 vaccination.

**Results:** There were 2,030 (5%) farm and 42,951 (95%) non-farm residents in the sample. Overall, 33% of participants initiated, and 29% completed, the COVID-19 vaccine series. After covariate adjustment, farm residence was associated with significantly lower odds of COVID-19 vaccine initiation (aOR [95% CI]=0.69 [0.62, 0.77],  $p < 0.001$ ) and series completion (aOR=0.70 [0.63, 0.79],  $p < 0.001$ ). In the subset of individuals age  $\geq 12$  years ( $n=24,655$ ), just 12% received a COVID-19 vaccine booster. Farm residence was again associated with a significantly lower odds of COVID-19 vaccine booster receipt (aOR=0.81 [0.66, 0.98],  $p=0.028$ ).

**Conclusions:** COVID-19 vaccine coverage was low in this sample of Wisconsin children and adolescents. Those who live on farms have ~25% lower levels of COVID-19 vaccine initiation, series completion, and booster receipt compared to their non-farm counterparts. Farm kids are an underserved group and may require more effective public health interventions designed to prevent COVID-19.