The effectiveness of standard egg-derived trivalent and quadrivalent influenza vaccines (TIVe and QIVe, respectively) might be reduced in adults ≥65 years in part due to immunosenescence. A high-dose trivalent influenza vaccine (HD-TIV; Fluzone® High Dose, Sanofi Pasteur) offer older adults enhanced protection versus standard vaccines. The vaccine effectiveness of aTIV relative to enhanced and standard vaccines has not been estimated in many head-to-head studies with large sample sizes.

The objective of this study was to determine the relative vaccine effectiveness (rVE) of aTIV compared to a HD-TIV and standard TIVe and QIVe vaccines for preventing influenza-related medical encounters among adults ≥65 years during the 2017-18 and 2018-19 influenza seasons in the U.S.

A retrospective cohort study was conducted among subjects ≥65 years of age vaccinated with one of four influenza vaccines: TIVe, QIVe, aTIV and HD-TIV. Figure 1.

Data on immunizations (identified using CPT, CVX and NDC codes), the outcome of influenza-related medical encounters, (defined by ICD-9/10 codes J09*-J11*) and demographic and confounding variables were ascertained from subjects’ primary care electronic medical records integrated with medical and pharmacy claims data.

In the statistical analysis, propensity scores were calculated for each study participant using a multivariable logit model adjusted for age, sex, race/ethnicity, geographic location, week of influenza vaccination, and health status quantified using the Charlson Comorbidity Index (CCI).

Propensity scores were then used to create a stabilized inverse-probability of treatment weighted (IPTW) sample. Odd ratios (ORs) were derived using a conditional logistic regression model. Finally, rVE was calculated using the formula: (1-OR)*100.

The distribution of the study population is outlined in Figure 2. The 4 vaccine groups were comparable with respect to age, gender, race and ethnicity.

For the overall study cohort, adjusted analyses showed statistically significantly greater rVE for aTIV versus comparators across both influenza seasons. Figure 3.

A descriptive evaluation was conducted to compare the incidence of influenza-related medical encounters (AFHSC Code Set B) within the study cohort to CDC-reported, laboratory-confirmed influenza.

Visual concordance between the incidence curves was observed across both seasons (Figure 4A-B), supporting the use of this diagnostic code set.

In the 2017-2018 and 2018-2019 influenza seasons in the U.S., adjusted analyses demonstrated statistically significantly greater reduction in influenza-related medical encounters in adults ≥65 years vaccinated with aTIV versus TIVe, QIVe and HD-TIV.

### REFERENCES


### CONCLUSIONS

Disclosures: CB, GS, JM are employees of Seqirus Inc. LF, DO, and JV are employees of Veradigm. This study was funded by Seqirus Inc.