

RELATIVE EFFECTIVENESS OF aTIV VERSUS TIVe, QIVe AND HD-TIV IN PREVENTING INFLUENZA-RELATED MEDICAL ENCOUNTERS DURING THE 2017-18 AND 2018-19 INFLUENZA SEASONS IN THE U.S.

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BACKGROUND

- 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.^{1,2}
- An MF59®-adjuvanted trivalent influenza vaccine³⁻⁵ (aTIV; Flud®[®], Seqirus) and a high-dose trivalent influenza vaccine^{6,7} (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.

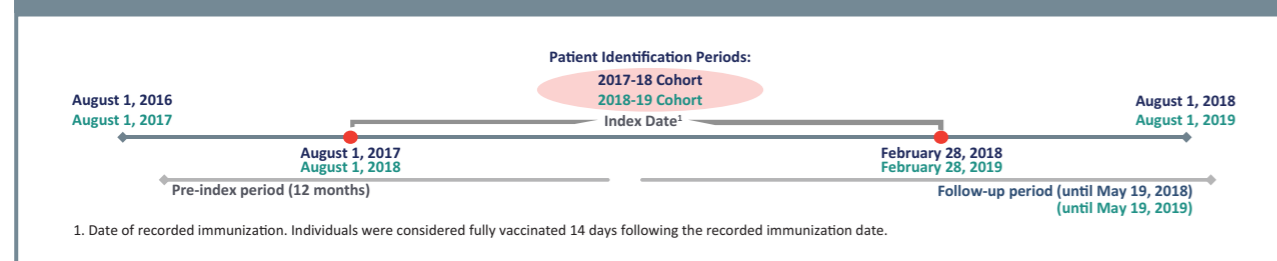
OBJECTIVE

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.

METHODS

- 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.**

FIGURE 1. STUDY DESIGN – RETROSPECTIVE COHORT.

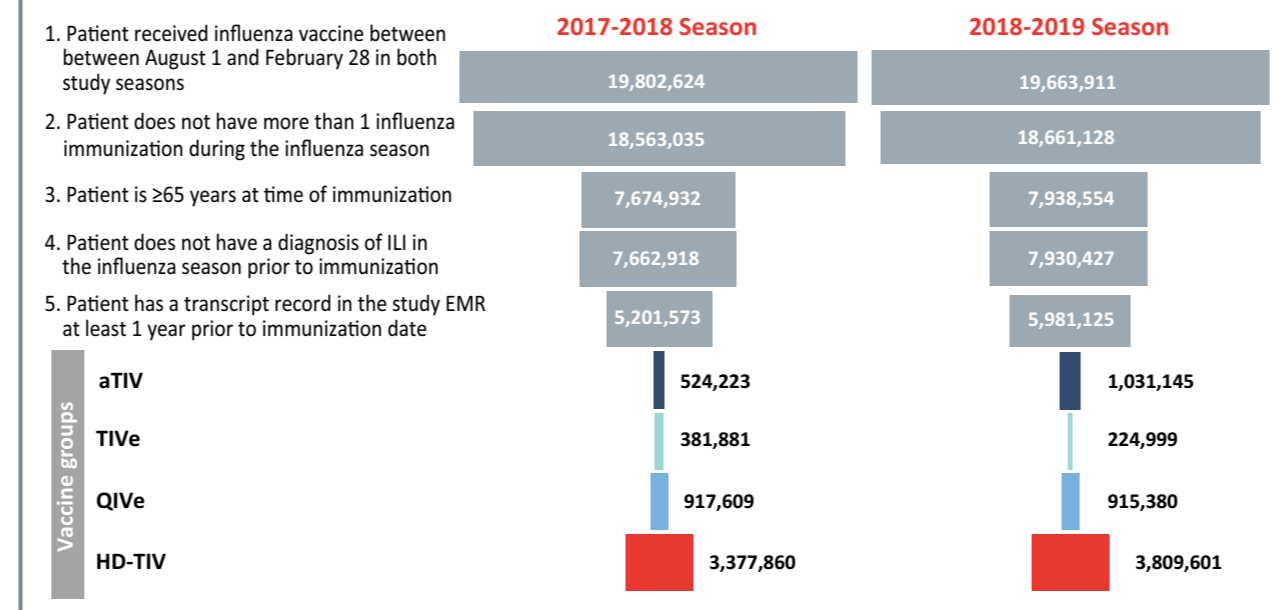


- Data on immunizations (identified using CPT, CVX and NDC codes), the outcome of influenza-related medical encounters, (defined by ICD-9/10 codes J09*-J11*)⁸ and demographic and confounding variables were ascertained from subjects' primary care electronic medical records integrated with medical and pharmacy claims data.⁸
- 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.

RESULTS

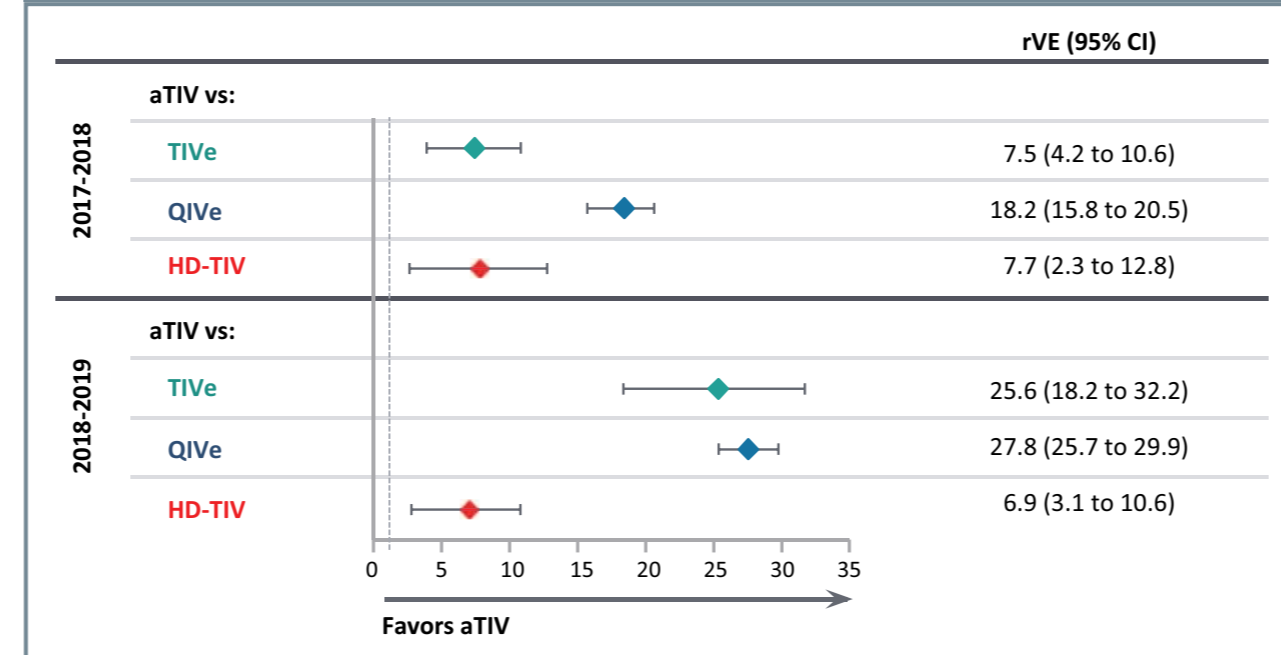
- The distribution of the study population is outlined in **Figure 2.** The 4 vaccine groups were comparable with respect to age, gender, race and ethnicity.

FIGURE 2. SUBJECT DETERMINATION OF VACCINE COHORTS.



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

FIGURE 3. RELATIVE VACCINE EFFECTIVENESS OF aTIV VS. TIVe, QIVe AND HD-TIV FOR THE 2017-2018 AND 2018-2019 INFLUENZA SEASONS (ADJUSTED).



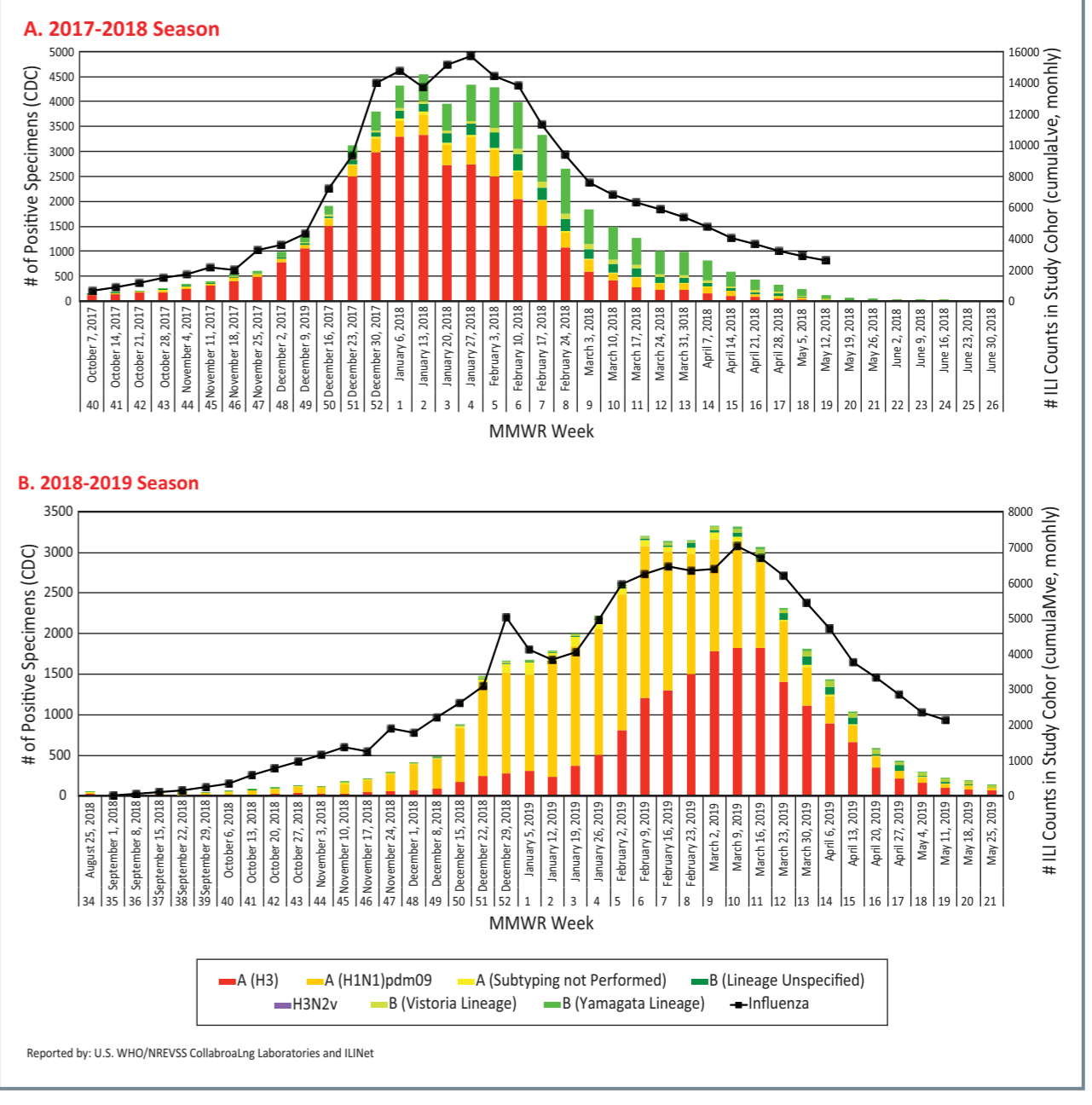
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RESULTS (CONT'D)

- A descriptive evaluation was conducted to compare the incidence of influenza-related medical encounters (AFHSC Code Set B)⁸ 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.

FIGURE 4. INFLUENZA POSITIVE TESTS REPORTED TO CDC BY PUBLIC HEALTH LABORATORIES, NATIONAL SUMMARY OVERLAPPED WITH INCIDENCE OF INFLUENZA-RELATED MEDICAL ENCOUNTERS IN THE STUDY COHORT.



CONCLUSIONS

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.

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