Methods: This study analyzed data from the Center for Disease Control and Prevention's (CDC) Behavioral Risk Factors Surveillance System (BRFSS) survey. Persons ages 18 to 36 years of age, who lived in 17 states that included the supplementary “Adult Human Papillomavirus (HPV)” module questionnaire in 2016, 2017 or 2018, were included. We compared self-reported receipt of HPV vaccination among persons living in Republican versus Democratic states, based on state electoral college votes in the 2016 US presidential election. Mantel-Haenszel stratified analysis was used to estimate prevalence ratios and to assess for effect modification and control for confounding.

Results: Overall, 36,334 survey respondents were included in the analysis, 22.7% of whom reported prior receipt of the HPV vaccine, 28.1% in Democratic states and 20.4% in Republican states. When adjusted for race, living in a Democratic state was associated with a higher prevalence of prior receipt of the HPV vaccine in comparison to living in a Republican state. This association was strongest for men less than 26 years of age (PR 1.77, 95% CI: 1.58, 1.98) but remained significant for men ages 26 – 36 years (PR 1.51, 95% CI: 1.24, 1.85), women less than 26 years of age (PR 1.20, 95% CI: 1.13, 1.27), and women ages 26 – 36 years (PR 1.69, 95% CI: 1.57, 1.83).

Conclusion: Overall HPV vaccine coverage was low in adults 18–36 years of age. The strong association between state-level voting patterns and prior receipt of the HPV vaccine suggests that HPV vaccine coverage is lower in Republican states when compared to Democratic states. Further public health efforts are needed to promote HPV vaccine uptake among young men and women, particularly in Republican voting states.

Disclosures: All Authors: No reported disclosures

19. Completion of Two-Dose Recombinant Zoster Vaccine Series in Adults 50 Years and Older
Hung-Fu Tseng, MPH, PhD1; Lei Qian, PhD2; Jun Wu, MD, MS3; Yi Luo, PhD2; Lina S. Sy, MPH1; Katia Bruzovsr, PhD1, MPH1; Bradley Ackerson, MD1; 1Kaiser Permanente Southern California, Pasadena, California; 2Kaiser Permanente Southern California, Pasadena, California; 3Kaiser Permanente, South Bay Medical Center, Harbor City, CA

Session: P-2. Adult Vaccines

Background: In 2017, the Advisory Committee on Immunization Practices preferentially recommended adjuvanted recombinant zoster vaccine (RVZV) for adults ≥50 years as a two-dose series 2-6 months apart. We evaluated two-dose RVZV completion and factors associated with completion.

Methods: The study included Kaiser Permanente Southern California members ≥50 years who received an RVZV dose during April-November 2018 and had continuous membership 12 months before to 9 months after the 1st RVZV dose (RVZV1). Completion was defined as receipt of the 2nd dose ≥4 weeks to 9 months after RVZV1 (allowing a 3-month grace period). Characteristics including age at RVZV1, sex, race/ethnicity, Medicaid status, neighborhood level income and education, distance from home to medical office, comorbidities, history of herpes zoster, health care utilization before and after RVZV1, receipt of influenza vaccine, vaccination month (supply short- age proxy), concomitant vaccine, department administering RVZV1, medical center, and medically attended local or systemic reaction, pain, or gout after RVZV1 were compared between completers and non-completers. Adjusted odds ratios (aOR) and 95% confidence intervals (CI) for factors associated with completion were estimated by multivariable logistic regression.

Results: Among 31,120 RVZV1 recipients, 67.2% completed the series within 9 months. In adjusted analyses, higher completion was associated with White compared with Black or Hispanic race/ethnicity, higher neighborhood income and education, no chronic pulmonary disease, diabetes, or dementia, more outpatient visits and fewer emergency department visits before or after RVZV1, no hospitalizations after RVZV1, receipt of influenza vaccine, receipt of RVZV1 in June-November rather than April-May 2018, no concomitant vaccine with RVZV1, and receipt of RVZV1 in Family Practice rather than Internal Medicine. Systemic reactions or pain after RVZV1 was not associated with completion.

Table 2. RVZV Series Completion by Selected Characteristics During Follow-up of Members Aged ≥50 Years Who Received at Least One Dose of RVZV at Kaiser Permanente Southern California in April-November 2018

Table 2. RVZV Series Completion by Selected Characteristics During Follow-up of Members Aged ≥50 Years Who Received at Least One Dose of RVZV at Kaiser Permanente Southern California in April-November 2018

| Characteristic | 1st Dose Only (n=31,120) | Completed (n=21,034) | aOR (95% CI) |
|---------------|--------------------------|----------------------|--------------|
| No McKDeR 3-way vaccine 3-7 days after 1st dose | No | 16,100 (52.6%) | 18,500 (59.8%) | 0.85 (0.82–0.88) |
| Yes | 15,020 (48.4%) | 16,534 (53.4%) | 1.00 (0.97–1.03) |
| Medically attended local or systemic reaction, pain, or gout after RVZV1 | No | 15,520 (50.0%) | 17,922 (59.9%) | 0.94 (0.91–0.97) |
| Yes | 16,000 (51.6%) | 16,484 (53.3%) | 0.97 (0.94–1.00) |
| Number of emergency department visits within 6 months after 1st dose | 0 | 15,520 (50.0%) | 17,922 (59.9%) | 0.80 (0.76–0.84) |
| 1-2 | 14,520 (47.0%) | 15,854 (50.9%) | 1.02 (0.98–1.05) |
| ≥3 | 1,080 (3.5%) | 1,234 (4.2%) | 0.83 (0.77–0.90) |
| Number of hospitalizations within 3 months after 1st dose | 0 | 15,520 (50.0%) | 17,922 (59.9%) | 0.80 (0.76–0.84) |
| 1 | 14,520 (47.0%) | 15,854 (50.9%) | 1.02 (0.98–1.05) |
| 2+ | 1,080 (3.5%) | 1,234 (4.2%) | 0.83 (0.77–0.90) |

1 US- square test for all variables; RVZV = recombinant zoster vaccine
Conclusion: Completion of RZV series appears moderate in the early phase of implementation. Despite similar accessibility in a healthcare system, completion varied by race/ethnicity, socioeconomic status, health status, and care seeking behavior, suggesting areas to target for improvement.

Disclosures: Hung-Fu Tseng, MPH, PhD, GlaxoSmithKlein (Research Grant or Support) Lei Qian, PhD, GlaxoSmithKlein (Research Grant or Support) Jun Wu, MD, MS, GlaxoSmithKlein (Research Grant or Support) Yi Luo, PhD, GlaxoSmithKlein (Research Grant or Support) Lina S. Sy, MPH, GlaxoSmithKlein (Research Grant or Support) Katia Bruxvoort, PhD, MPH, GlaxoSmithKlein (Research Grant or Support) Bradley Ackerson, MD, GlaxoSmithKlein (Research Grant or Support)

20. Cost-Effectiveness of Implementing 13-Valent Pneumococcal Conjugate Vaccine (PCV13) for Adults Aged \( \geq 19 \) Years with Underlying Conditions
Miwako Kobayashi, MD, MPH1; Charles Stoecker, PhD, MA2; Wei Xing, MS3; Bo-Hyun Cho, PhD4; Tamara Pilishvili, PhD5; 1Centers for Disease Control and Prevention, Atlanta, Georgia; 2Tulane University, New Orleans, Louisiana; 3Weems Design Studio Inc. Contractor to CDC, Atlanta, Georgia; 4CDC, Atlanta, Georgia; 5Centers for Disease Control and Prevention, Atlanta, GA, USA, Atlanta, Georgia

Session: P-2. Adult Vaccines

Background: In June 2019, the U.S. Advisory Committee on Immunization Practices changed the recommendation for routine PCV13 use in immunocompetent adults aged \( \geq 65 \), including those with certain chronic medical conditions (CMC). PCV13 is now recommended based on shared clinical decision-making. Adults with CMC continue to be at increased risk for pneumococcal disease. We assessed the cost-effectiveness of adding PCV13 to the recommended PPSV23 dose for adults aged \( \geq 19 \) years with CMC.

Methods: We used a probabilistic model following a cohort of 19-year-old U.S. adults. We used Monte Carlo simulation to estimate the impact on program, medical, and non-medical costs (in 2017 U.S. dollars) using the societal perspective, and pneumococcal disease burden when administering PCV13 in series with PPSV23. Table 1 shows vaccine effectiveness (VE) assumptions for the base case. We performed one-way sensitivity analyses assuming higher PCV13 VE against serotype 3 disease.

Vaccine effectiveness assumptions by age group used for the base case

| Vaccine effectiveness | Age group |
|-----------------------|-----------|
| Age group             | 20-24 years | 25-39 years |
| PCV13                  | Value     | Value     |
| PCV13 vs PPSV23        | 0.94      | 0.95      |
| PCV13 vs PPSV23 type-5 | 0.95      | 0.95      |
| PCV13 vs PPSV23 type-6 | 0.95      | 0.95      |

Results: In the base-case scenario, adding a dose of PCV13 upon CMC diagnosis cost $689,299 per QALY. Results of one-way sensitivity analyses are presented in Table 2.

Base case and one-way sensitivity analyses of adding PCV13 at diagnosis of CMC

Table 2: Base case and one-way sensitivity analyses of adding PCV13 at diagnosis of CMC

| Health Outcomes | Base case | PCV13 VE against S13 PS1 and S33 PS16 against Other PS13 Vaccine types |
|-----------------|-----------|---------------------------------------------------------------------|
| Hospitalized NIP Cases | 519       | 2,244                                                               |
| Non-hospitalized NIP Cases | 560       | 3,427                                                               |
| Deaths due to PSI | 20        | 77                                                                  |
| Discounted 5-year gained | 174       | 809                                                                 |
| Discounted 15-year gained | 255       | 1,243                                                               |

Costs (dollars)

| Cost (QALY) | 689,299 |
|-------------|---------|

Conclusion: Adding PCV13 in series with PPSV23 for adults 19 years or older with CMC was not cost-saving. Results were sensitive to assumptions on PCV13 VE against serotype 3 disease.

Disclosures: All Authors: No reported disclosures

21. Current and Nadir CD4+ Counts Are Associated with Hepatitis-B Seroprotection Rates in People with HIV
Samuel Schnittman, n/a1; Roland Zepf, PhD, RN2; Jennifer Cocoboba, PharmD, AAHIVP, BCPS3; David Sears, MD, MHP4; 1University of California, San Francisco, San Francisco, California; 2University of California San Francisco, School of Pharmacy, San Francisco, California

Session: P-2. Adult Vaccines

Background: A two-dose hepatitis B (HBV) vaccine with an immunostimulatory adjuvant (HBV-ISS, Heplisa-B), was FDA approved in 2017 for adults 18 years and older. In randomized controlled trials (RCTs), HBV-ISS demonstrated a seroprotection rate (SPR) of 90–95% versus 65–80% for In Jerrix-B (HBV-Eng). No RCTs, however, included people with HIV (PWH), and the SPR and its predictors in this population are unknown.

Methods: This retrospective cohort study enrolled PWH ages 18 years and older without current HBV seroprotection at an HIV clinic at a tertiary care center. HBV