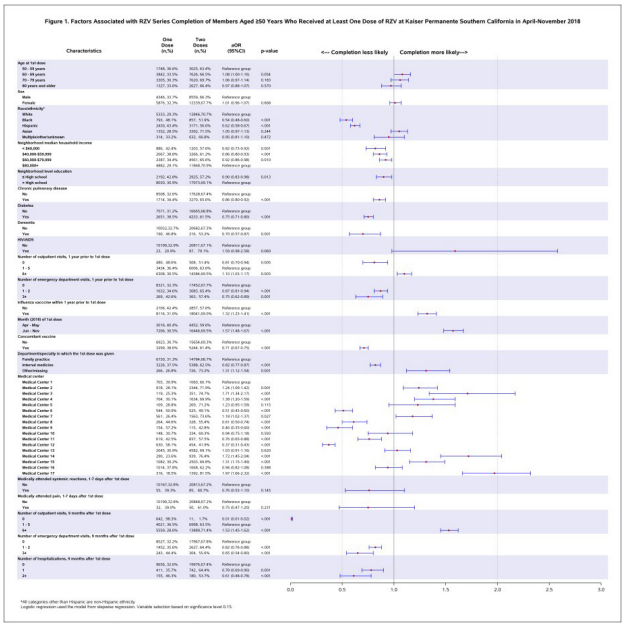
Figure 1. Factors Associated with RZV Series Completion of Members Aged ≥ 50 Years Who Received at Least One Dose of RZV at KPSC in April-November 2018



Conclusion: Completion of RZV series appears moderate in the early phase of implementation. Despite similar accessibility in a health care system, completion varied by race/ethnicity, socioeconomic status, health status, and care seeking behavior, suggesting areas to target for improvement.

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20. Cost-Effectiveness of Implementing 13-Valent Pneumococcal Conjugate Vaccine (Pcv13) for Adults Aged ≥19 Years with Underlying Conditions

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Background: In June 2019, the U.S. Advisory Committee on Immunization Practices changed the recommendation for routine PCV13 use in immunocompetent adults aged ≥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 ≥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

Table 1. Vaccine effectiveness assumptions by age group used for the base case

Vaccine effectiveness		Age groups			
		19–64 years		≥65 years	
Vaccine type	Outcome	Value	Range	Value	Range
PCV13	PCV13-type IPD (-ST3, +ST6C)[i]	75	(41.4, 90.8)	67	(11, 88)
PCV13	ST3 IPD[ii]	0	(0, 45)	0	(0, 26)
PCV13	PCV13-type NBPP (-ST3), CMC[iii]	45	(14.2, 65.3)	32.5	(3.9, 53)
PCV13	ST3 NBPP[iv]	0	(0, 45)	0	(0, 45)
PPSV23	PPSV23-type IPD[v]	73	(56.0, 84.0)	67	(37, 73)
PPSV23	PPSV23-type NBPP[vi]	0	(0, 50)	0	(0, 50)

CMC: chronic medical condition, IPD: invasive pneumococcal disease, NBPP: non-bacteremic pneumococcal pneumonia, PCV13: 13-valent pneumococcal conjugate vaccine, PPSV23: 23-valent pneumococcal polysaccharide vaccine, ST3: serotype 3, ST6C: serotype 6C

[i] Source: Bonten et al. 2015 for 19–64 year old. Pilishvili et al.2018 for age ≥65 years
[ii] Source for adults aged ≥65 years from Pilishvili et al. 2018. For adults aged 19–64 year olds, we assumed that the upper range will be as high as what we estimated for ST3 NBPP.
[iii] Source: Bonten et al. 2015 for age 19–64 years Suaya et al. 2018.
[iv] We assume PCV13 ineffective against ST3 pneumonia based on results from serotype 3 IPD For the upper bound of effectiveness, we use the effectiveness of PCV13 against all vaccine-type pneumonia from Bonten et al. 2015.
[v] Source: Falkenhorst et al. 2017. For 19–64 year olds, pooled estimate from case-control studies was used. For ≥65 years old, we asumed the point estimate to be the same as PCV13.
[vi] Source: Schiffner-Rohe et al. 2016, Falkenhorst et al. 2017, Tin Tin Htar et al. 2017.

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

	Base case	PCV13 VE against ST3 IPD Equal to Other PCV13-type IPD*	PCV13 VE against ST3 NBPP Equal to Other PCV13-type NBPP*	PCV13 VE against ST3 IPD and NBPP Equal to Other PCV13-type NBPP and IPD*
Health Outcomes				
IPD Cases	-54	-141	-54	-141
Hospitalized NBPP Cases	-319	-319	-2,244	-2,244
Non-hospitalized NBPP Cases	-565	-565	-3,427	-3,427
Deaths due to IPD	-4	-12	-4	-12
Deaths due to NBPP	-10	-10	-77	-77
Discounted QALYs gained	174	269	809	904
Discounted life-years gained	255	393	1,243	1,382
Costs (million $)				
Total Cost	120	116	75	72
Medical Costs	-11	-15	-55	-59
Vaccine Costs	131	131	131	131
Cost Ratios ($)				
Cost/QALY	689,299	431,419	93,184	79,416
Cost/Life-year	468,449	294,922	60,616	51,981

IPD: invasive pneumococcal disease, NBPP: non-bacteremic pneumococcal pneumonia, QALY: quality-adjusted life year, ST3: serotype 3, VE: vaccine effectiveness
*When PCV is assigned equal protection against serotype 3 as against other serotypes it is assigned 75% vs IPD and 45% vs NBPP for the 19-64 age group and 67% vs IPD and 32.5% vs NBPP for the 65+ age group

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.

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21. Current and Nadir CD4+ Counts Are Associated with Heplisav-B Seroprotection Rates in People with HIV

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Session: P-2. Adult Vaccines

Background: A two-dose hepatitis B (HBV) vaccine with an immunostimulatory adjuvant (HBV-ISS, Heplisav-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 Engerix-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