Uptake of 20-Valent Pneumococcal Conjugate Vaccine (PCV20) Among United States (US) Adults Following 2022 Update to Recommendations

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INTRODUCTION

- Updated recommendations for US adult pneumococcal vaccination were posted online on January 27, 2022[1-3]:
  - New 15- and 20-valent pneumococcal conjugate vaccines (PCV15 and PCV20, respectively) were added and 13-valent PCV (PCV13) was removed
  - Unlike recipients of PCV13 or PCV15, adults who receive PCV20 are not recommended to receive 23-valent polysaccharide vaccine (PPSV23)
  - Adults aged 19-64 years with certain medical conditions ("At-risk") are now recommended to receive a PCV, as opposed to previous recommendations for only PPSV23

OBJECTIVES

- To measure uptake of pneumococcal vaccines (PCV20, PCV15, PCV13, PPSV23) among eligible US adults following publication of updated ACIP recommendations
- To measure disparities in uptake of pneumococcal vaccines across subgroups of eligible US adults

METHODS

Study design: retrospective observational cohort

Data source: Optum Clinformatics Data Mart Database (01/01/2015 – 10/31/2023)

Study population: adults aged ≥19 years enrolled in a participating health plan on 01/27/2022 and for preceding 1-year period:

- Adults aged <65 years without chronic (at-risk [AR]) or immunocompromising (high-risk [HR]) medical conditions were excluded

Study measures: receipt of pneumococcal vaccine, overall and by type, from 01/27/2022 – 10/31/2023

Baseline characteristics: age, sex, race, comorbidity profile, vaccination history, and household income

Statistical analyses: cumulative vaccine uptake was estimated using Kaplan-Meier method

RESULTS

Baseline Characteristics

- Study population included 6.8M adults; 84% were aged ≥65 years and 16% were aged <65 years with one or more AR/HR condition

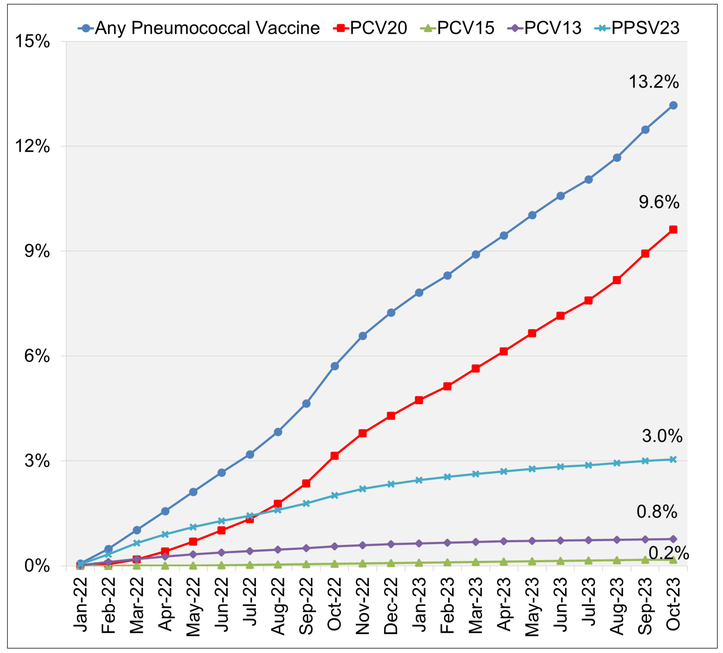
Table 1. Baseline characteristics

	All Adults N=6.8M	Age (years) 19-49 N=0.4M	50-59 N=0.4M	60-64 N=0.3M	65-66 N=0.1M	67-74 N=2.6M	≥75 N=2.9M
Sex							
Male	44.1%	47.2%	49.8%	50.7%	49.3%	44.4%	41.8%
Female	55.9%	52.8%	50.2%	49.3%	50.7%	55.6%	58.2%
Race							
White	69.9%	63.1%	66.5%	69.3%	71.7%	68.9%	72.2%
Black	9.8%	12.6%	13.6%	13.4%	10.8%	9.7%	8.4%
Hispanic	10.0%	11.5%	10.3%	8.9%	8.7%	10.1%	10.0%
Asian	3.6%	3.9%	3.2%	2.2%	2.5%	3.7%	3.6%
Unknown	6.7%	8.9%	6.3%	6.1%	6.2%	7.6%	5.8%
Comorbidity profile							
Low-risk	38.3%	--	--	--	51.6%	49.1%	42.6%
At-risk	39.4%	81.8%	75.0%	70.8%	33.1%	33.4%	31.0%
High-risk	22.3%	18.2%	25.0%	29.2%	15.3%	17.4%	26.4%
Vaccination history							
PCV13 only	15.5%	1.3%	3.1%	5.1%	4.6%	13.6%	22.5%
PPSV23 only	11.1%	6.3%	10.9%	13.2%	9.3%	14.7%	8.4%
PCV13 and PPSV23	11.3%	0.8%	1.9%	3.2%	2.5%	15.1%	11.9%
None	62.1%	91.6%	84.1%	78.5%	83.5%	56.6%	57.2%
Household income							
<$50,000	34.6%	31.9%	34.4%	36.1%	30.5%	31.7%	37.7%
$50-$99,000	36.2%	27.0%	28.7%	31.1%	33.0%	38.0%	37.5%
≥$100,000	21.8%	29.4%	29.7%	26.0%	29.1%	22.3%	18.4%
Unknown	7.4%	11.6%	7.2%	6.8%	7.4%	8.0%	6.3%

Vaccine Uptake, Overall and by Type

- During the 21-month follow-up period (mean = 18 months), only 13% of adults received any pneumococcal vaccine, mostly PCV20 (10%)

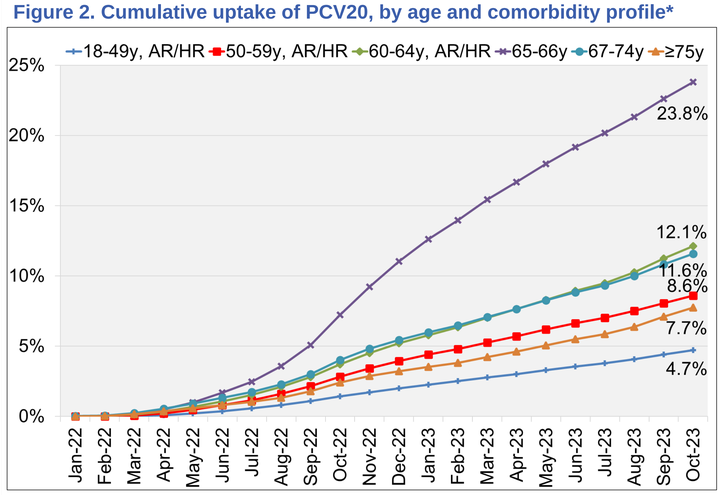
Figure 1. Cumulative uptake of pneumococcal vaccine, overall and by type



PCV20 Uptake, by Age

- PCV20 uptake was highest among adults aged 65-66 years and was lowest among adults aged 18-49 years with AR/HR medical conditions

Figure 2. Cumulative uptake of PCV20, by age and comorbidity profile*

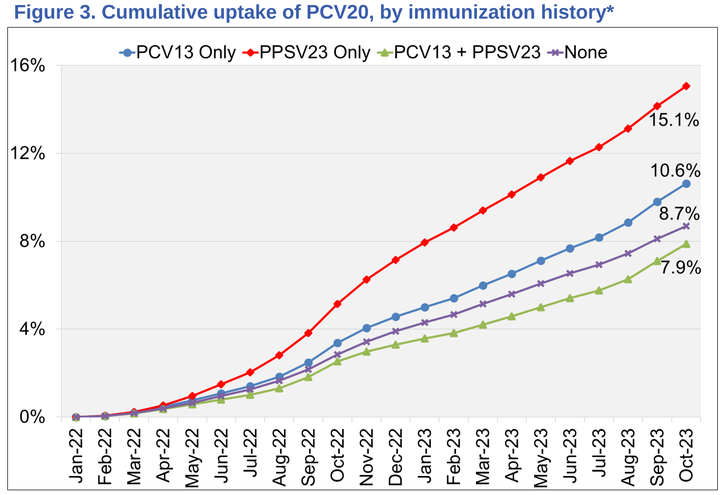


*Comorbidity profile considered only in identifying AR/HR vaccine candidates aged <65 years

PCV20 Uptake, by Immunization History

- PCV20 uptake was highest among adults with a history of PPSV23 only and lowest among those with a history of PCV13+PPSV23 or without a history of vaccination

Figure 3. Cumulative uptake of PCV20, by immunization history*



*Immunization history based on available data from January 1, 2015, through day preceding January 27, 2022

CONCLUSIONS

- **Fewer than ~1 in 8 eligible US adults received PCV20 in the first 21 months following updated recommendations**
- **Uptake was highest among those near age 65 years and considerably lower in both younger and older adults**
- **Uptake was particularly low among adults aged 18-49 years and those without a history of pneumococcal vaccination**
- **Routine evaluation of vaccination status by providers and additional strategies to increase uptake of current recommendations are warranted**

Limitations

- Use of operational algorithms and diagnosis codes to define comorbidity profiles may have resulted in some misclassification
- Vaccine history was limited to available healthcare claims; evidence of immunization may be missing for some vaccinees
- Race and household income variables in data source were derived using area-level measures; their accuracy is unknown

References

1. MMWR Morb Mortal Wkly Rep 2022;71(4):109-17.
2. MMWR Morb Mortal Wkly Rep 2019;68(46):1069-75.
3. MMWR Morb Mortal Wkly Rep 2014;63(37):822-5.

Acknowledgments

Assistance with poster preparation was provided by Mary Cecil, who is employed by Avalere Health

Disclosures

Research described herein, including poster preparation, was funded by Pfizer Inc.

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Presented at ISPOR; May 5-8, 2024; Atlanta, Georgia