Knowledge, Attitudes, and Perceptions Towards Pneumococcal Vaccines Among Adults in the United States

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Introduction

- Vaccination can prevent severe disease and hospitalization, decrease overall health care resource use, and is considered one of the most cost-effective interventions in health care[1]
- Among US adults, the incidence of pneumococcal disease (PD) has decreased since the introduction of pneumococcal vaccines, but the burden remains high, particularly for adults ≥50 years old compared to adults aged 19-49 years[2]
- In 2021, pneumococcal vaccine coverage (≥1 dose) was suboptimal; among adults ≥65 years coverage was reported to be 65.8%, while coverage was 22.2% among adults ages 19-64 years at increased risk for PD[3]
- With increasing options for higher-valent pneumococcal vaccines becoming available, it is important to gain input from stakeholders (eg, patients, health care consumers [HCCs], health care providers [HCPs], and health care delivery systems) when evaluating new vaccines

Objectives

To assess HCCs' knowledge, attitudes, and perceptions toward adult pneumococcal vaccines.

Methods

Study design and eligibility criteria

- Noninterventional cross-sectional survey
- Survey conducted between March through May 2024
- The survey recruitment was designed to target a roughly even distribution across age and risk groups
- HCCs were eligible if they self-reported that they:
  - Were age 19 years or older (or had reached the legal age of majority in their state)
  - Lived in the US
  - Were able to read, write, and understand English well enough to take part in the survey
  - Were not against or strongly against vaccination (self-rated as 4 or more on a scale from 0 (indicating strongly against vaccination) to 10 (indicating strongly for vaccination) to capture individuals who are supportive of or relatively neutral toward vaccination, based on a Vaccination Trust Indicator scale adapted for this study)[4]

Survey development and data collection

- Findings from a targeted literature review, qualitive semi-structured interviews with US adult HCCs with differing risk profiles were used to inform the content of the survey[5]
- Recruitment was designed to reflect a variety of age and risk categories, gender (at least 40% men and 40% women), and region (at least 15% from each of the 4 US Census–defined regions)

Data analysis

- HCC demographic characteristics, knowledge, attitudes, and perceptions were analyzed descriptively using univariate statistics
- Mean, standard deviation, median, and range are presented for continuous variables while frequency and percent are presented for categorical variables

Results

Respondent characteristics

- A total of 141 HCCs completed the survey. The mean age of HCCs was 53.1 years, and over half were male (51.1%) and White (64.5%)
- Most HCCs had some college education (70.9%) and an annual household income of <$75,000 (52.5%); their most common insurance was private employer-sponsored medical insurance (36.2%)
- By design, the sample of HCCs was distributed roughly evenly among the 6 age/risk groups (16.3%-17.7% for each). On a scale from 4 (relatively neutral toward vaccination) to 10 (strongly for vaccination), HCCs reported a mean score of 8.4

Table 1. HCC recent experiences with vaccines

Variable	HCCs (N=141)
Received at least 1 vaccine in past 12 months, N (%), Yes	115 (81.6)
Typically receive vaccines at, N (%)	
Medical office	91 (64.5)
Pharmacy	39 (27.7)
Pop-up clinic	7 (5.0)
Workplace	2 (1.4)
Other	2 (1.4)
Most recent vaccine(s),[a] N (%)	
Seasonal (eg, COVID or influenza)	85 (60.3)
Nonseasonal (eg, shingles or a booster for Tdap)	19 (13.5)
Both	29 (20.6)
I don't remember	8 (5.7)
Most recent vaccine(s) received at,[a] N (%)	
Medical office	83 (58.9)
Pharmacy	43 (30.5)
Pop-up clinic	8 (5.7)
Workplace	5 (3.6)
Other	2 (1.4)
Reasons most recent vaccine(s) was received at the indicated location,[b] N (%)	
Convenience	88 (62.4)
Trust in HCP or pharmacist	71 (50.4)
Ease of accessing/updating vaccination records	52 (36.9)
Cost	44 (31.2)
Instructed or asked to by HCP or pharmacist	39 (27.7)
Only location available to receive the vaccine	8 (5.7)
Other	3 (2.1)
Number of vaccines received at most recent visit, N (%)	
1	86 (61.0)
2	48 (34.0)
3 or more	7 (5.0)

[a]Responses may not add up to 100% due to rounding.
[b]Respondents could select >1 response option; total may be >100%.

- Most HCCs received at least 1 vaccine in the past year (81.6%) and the most common vaccination locations for their most recent vaccine were medical offices (58.9%) and pharmacies (30.5%)
  - Common rationales for location selection were convenience (62.4%), trust in HCP or pharmacist (50.4%), and ease of accessing/updating vaccination records (36.9%)

Table 2. HCC attitudes towards vaccines

Variable	HCCs (N=141)
Top information sources on vaccines,[a] N (%)	
Physician/care provider	114 (80.9)
Government or international agencies	57 (40.4)
Websites of medical groups	44 (31.2)
Online medical sites, like WebMD	36 (25.5)
State or local government agencies/health departments	37 (26.2)
News (newspapers, television, radio, online)	18 (12.8)
Advice from friends and family	22 (15.6)
Social media	15 (10.6)
Mailings (postal or email) from my insurer or organizations	7 (5.0)
Reasons for receiving vaccines,[a] N (%)	
Vaccines prevent serious disease	102 (72.3)
Vaccines help keep me healthy	95 (67.4)
Vaccines help protect infants or other people who don't have immunity against serious disease	47 (33.3)
Vaccines help me save money on medical care	42 (29.8)
Vaccines are required for my job or travel	32 (22.7)
No specific reason, but I typically do what my HCP says to	12 (8.5)
Importance of HCP's recommendation in vaccine decision-making,[b] N (%)	
Extremely important	69 (48.9)
Very important	48 (34.0)
Somewhat important	17 (12.1)
Not so important	3 (2.1)
Not at all important	1 (0.7)
I don't have a primary HCP	3 (2.1)
Likelihood of following HCP's vaccination recommendations, N (%)	
Always or almost always	73 (51.8)
Most of the time	55 (39.0)
Some of the time	11 (7.8)
Never or almost never	2 (1.4)
Reasons vaccine would not be received if recommended,[a] N (%)	
I was worried about whether the vaccine was safe	39 (27.7)
I was worried about whether the vaccine was effective	32 (22.7)
I don't trust the information I received about the vaccine	27 (19.2)
I am afraid of needles	17 (12.1)
I don't trust the manufacturer	15 (10.7)
I didn't think the vaccine was needed since the disease is no longer common any more	15 (10.7)
I heard or read negative news about vaccines	9 (6.4)
I don't trust my HCP	7 (5.0)
I don't believe people with my medical condition or background usually receive vaccines	4 (2.8)
There are no reasons that would keep me from receiving a recommended vaccine[c]	65 (46.1)

[a]Respondents could select >1 response option.
[b]Responses may not add up to 100% due to rounding.
[c]This response could not be selected simultaneously with any other option.

- HCCs reported that they received vaccines primarily to prevent serious disease (72.3%), remain healthy (67.4%), and help protect infants or other people without immunity against serious disease (33.3%)
- Most HCCs (95.0%) felt that their HCP's recommendation was important to them to support their decision-making about which vaccinations to receive, and more than half of HCCs (51.8%) always or almost always followed their HCP's vaccine recommendations
  - Common reasons HCCs would not receive a recommended vaccine were concerns about whether the vaccine was safe (27.7%) or effective (22.7%), and not trusting information received on the vaccine (19.2%)

Table 3. HCC knowledge, attitudes, and perceptions towards pneumococcal vaccines

Variable	HCCs (N=141)
Knowledge about pneumococcal vaccines,[a] N (%)	
Extremely knowledgeable	23 (16.3)
Very knowledgeable	31 (22.0)
Somewhat knowledgeable	61 (43.3)
Not so knowledgeable	20 (14.2)
Not at all knowledgeable	6 (4.3)
Want to receive another dose of a new pneumococcal vaccine to improve protection, N (%)	
Yes, definitely	49 (34.8)
Yes, probably	66 (46.8)
I'm not sure	11 (7.8)
No, probably not	11 (7.8)
No, definitely not	4 (2.8)
Willing to receive a pneumococcal vaccine now if able to,[a] N (%)	
Yes, definitely	55 (39.0)
Yes, probably	64 (45.4)
I'm not sure	8 (5.7)
No, probably not	8 (5.7)
No, definitely not	6 (4.3)

[a]Responses may not add up to 100% due to rounding.

- Most HCCs (81.6%) self-reported they were at least somewhat knowledgeable about pneumococcal vaccines, with 16.3% considering themselves to be extremely knowledgeable
- Most HCCs (81.6%) reported they would want to receive a supplemental dose of a new pneumococcal vaccine (after already receiving pneumococcal vaccines in the past) to lower their chances of getting PD, and most (84.4%) would be willing to receive a pneumococcal vaccine now, if eligible

Limitations

- The characteristics of participants from online membership-based panels may vary from the characteristics of the population, which may affect the representativeness of our results
- Adults who were strongly against vaccination were excluded, so it is possible that the support for vaccination found in our study might be higher than in the general population

Conclusions

- Adult HCCs considered their HCP's recommendation to be highly influential in their vaccine decision-making
- HCCs were interested and willing to receive pneumococcal vaccinations, both now if they were eligible and later as a supplemental dose after completion of the recommended series for increased disease coverage
- Our findings suggest that adult pneumococcal vaccines are generally accepted by HCCs and increased opportunities and eligibility for adult pneumococcal vaccinations would be valued

References

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