Preferences and attitudes of health care providers (HCPs) and adult health care consumers (HCCs) towards pneumococcal conjugate vaccines (PCVs) in the United States (US)

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Background

- Older adults and adults with certain chronic and immunocompromising medical conditions are at increased risk for pneumococcal disease[1]
- While pneumococcal vaccines have helped reduce the burden of pneumococcal disease, there is still a significant burden of disease among US adults[2]
- The Centers for Disease Control and Prevention (CDC) currently recommends PCV15 followed by PPSV23 or PCV20 for all adults ≥65 years old and for adults 19-64 years old with chronic or immunocompromising medical conditions[3]
- With the development of higher-valent pneumococcal vaccines for adults,[4] it is important to understand the perceptions and attitudes about pneumococcal vaccination of adult patients as health care consumers (HCCs) and health care providers (HCPs) caring for adults

Objective

- This study assesses the knowledge, attitudes, and perceptions of HCPs and HCCs towards adult pneumococcal vaccines and pneumococcal disease (PD) in the United States (US)

Methods

Study population

- US HCPs (physicians, nurse practitioners, physician assistants, and pharmacists) were eligible if they 1) recommended or prescribed vaccines to adults, 2) spent ≥25% of their time providing care to adult patients, and 3) had at least 1 (pharmacists) or 2 (clinicians) years of professional experience
- US adult HCCs (≥19 years old) were eligible if they were not strongly against vaccination (self-rated as ≥4 on a scale of 0 [strongly against] to 10 [strongly for])
- Both HCPs and HCCs were recruited from online panels
- Adult HCCs were purposively sampled to ensure a distribution across age and risk for PD

Data-collection process

- In-depth semistrucutred interviews were conducted via teleconference between June and August 2023 by interviewers trained in qualitative research methods
- Interviews lasted approximately 60 minutes and were audio recorded and transcribed verbatim

Analysis

- Baseline demographics and characteristics of participants were analyzed descriptively
- An initial coding structure was determined a priori and iteratively refined via open coding and a team-based consensus process

Results

Sample characteristics

- A total of 16 HCPs participated in the study (7 physicians, 6 advanced practitioners [APs], and 3 pharmacists)
  - HCPs had a mean age of 47.1 years; 56.3% were female; 53.8% worked in a practice in an urban area; and they had been in practice for an average of 16.8 years
  - A total of 9 adult HCCs participated in the study (3 healthy, 3 at-risk [chronic medical conditions], and 3 high-risk [immunocompromising conditions])

Table 1. HCP characteristics

Variable	Statistic or category	All (N=16)	Physicians (N=7)	Advanced practitioners (N=6)	Pharmacists (N=3)
Gender, N (%)[a]	Male	7 (43.8%)	3 (42.9%)	2 (33.3%)	1 (33.3%)
	Female	9 (56.3%)	4 (57.1%)	4 (66.7%)	2 (66.7%)
Age (in years)	Mean (SD)	47.1 (6.8)	50.3 (6.9)	44.2 (6.5)	45.7 (2.4)
Years in practice	Mean (SD)	16.8 (6.3)	19.1 (5.8)	12.5 (5.9)	16.8 (0.8)
Location of practice, N (%)	Urban	7 (53.8%)	2 (28.6%)	5 (83.3%)	NR
	Suburban	5 (38.5%)	4 (57.1%)	1 (16.7%)	
	Rural	1 (7.7%)	1 (14.3%)	0 (0.0%)	

NR, not reported; SD, standard deviation.
[a]Values may not add to 100% due to rounding.

Table 2. Adult HCC characteristics

Variable	Statistic or category	All (N=9)	Healthy (N=3)	At risk (N=3)	High risk (N=3)
Gender, N (%)	Female	6 (66.7%)	3 (100.0%)	1 (33.3%)	2 (66.7%)
Age (in years)	Mean (SD)	52.4 (15.9)	48.7 (16.2)	55.3 (10.9)	53.3 (18.7)
Race[a] N (%)	White	7 (77.8%)	3 (100%)	2 (66.7%)	2 (66.7%)
	Asian	2 (22.2%)	0 (0.0%)	1 (33.3%)	1 (33.3%)
Insurance, N (%)[a,b]	Private, through an employer	5 (55.6%)	0 (0.0%)	3 (100%)	2 (66.7%)
	Government, Medicare	3 (33.3%)	2 (66.7%)	0 (0.0%)	1 (33.3%)
	Government, Medicaid	2 (22.2%)	1 (33.3%)	0 (0.0%)	1 (33.3%)
	Military	1 (11.1%)	1 (33.3%)	0 (0.0%)	0 (0.0%)

SD, standard deviation.
[a]Additional race and insurance response options were available to respondents but were not selected.
[b]Could select more than 1 response/provided more than 1 response; total may be over 100%.

HCPs

Knowledge of pneumococcal vaccines

- All HCPs reported being familiar (93.8%) or somewhat familiar (6.3%) with diseases that pneumococcal vaccines can help prevent in adult patients, and nearly all HCPs (93.8%) recognized the differences in disease burden by age and risk group

Knowledge of and attitudes towards Advisory Committee on Immunization Practices (ACIP) recommendations:

- All HCPs interviewed were familiar (56.3%) or somewhat familiar (43.8%) with the current ACIP age- and risk-based recommendations, and all indicated that they would be likely or somewhat likely to follow them
- Most HCPs (90.9%) indicated that ACIP supplemental dose recommendations are feasible to implement at their practice, and almost all HCPs (92.9%) reported that they encourage their patients to get catch-up pneumococcal vaccines
- HCPs reported that an ACIP preferential recommendation for a pneumococcal vaccine may help with immunization record-keeping, improve vaccination rates, and simplify HCP decision-making:

> *"That will take away all the juggling between the different vaccinations. And, if we can agree upon a vaccine, I think that will be very important record-keeping-wise, keeping track of these folks. And that will definitely increase the immunization rate on these individuals."* – Physician (male, rural)

Lowering age-based recommendation for pneumococcal vaccines

- Most HCPs indicated they would be likely (75.0%) or somewhat likely (12.5%) to support lowering the age reccomendation from 65 years and older to 50 years and older, while 12.5% indicated they would be unlikely to support such a change:
  - Potential benefits mentioned include: preventing illness in patients between 50 and 64 years old who are also vulnerable, better antibody production earlier in life, and herd immunity

> *"But usually with people having multiple medical issues starting, even in healthy adults, the age 50 is very important."* – Physician (male, rural)

  - Potential drawbacks mentioned include: costs, waning immunity, lower vaccination rates, and burden of an additional shot

> *"I mean, cost to patients, cost to the system, waning immunity..."* – Physician (male, suburban)

Preference for more pneumococcal vaccine options

- 73.3% of HCPs indicated that having more choices for pneumococcal vaccines would impact their adult patients:

> *"The assumption is that more choice for pneumococcal vaccine should improve the protection and prevent serious pneumococcal infections. Yes. It will, in a positive way. So I'm always on the lookout for having more novel pneumococcal vaccines to be brought up and investigated."* – Nurse practitioner (male, urban)

  - 93.8% of HCPs reported it would be beneficial if pneumococcal vaccines were available interchangeably:

> *"Oh, that's crucial because, a lot of times, especially in my office setting, we have patients that are transferring from somewhere else. So not having to be concerned about which one they had before because they don't remember (they just know they had a vaccine) is important to be able to go ahead and start and not have to hold off because you're trying to get records and figure out which vaccine they had before you can continue on to the next step."* – Nurse practitioner (female, urban)

Experiences with vaccine refusals and vaccination barriers

- HCPs reported that an average of 18% of their patients refuse or delay their pneumococcal vaccination, and all HCPs had strategies to deal with such patients. Patients' reasons include inconvenience, potential side effects, and not wanting multiple vaccines at once
- A total of 80% of HCPs mentioned that barriers may hinder their patients from receiving pneumococcal vaccines:

> *"Transportation barrier. Language barrier. Understanding of the safety... Having insurance. Not understanding what their insurance covers, cost concerns."* - Physician (male, suburban)

Adult HCCs

Awareness and receipt of vaccines

- While all adults interviewed reported being aware of flu, shingles, and COVID vaccines, one-third (33.0%) were not aware of pneumococcal vaccines
- Just over half of adults (55.6%) reported being aware of diseases that pneumococcal vaccines prevent

Comfort with coadministration

- Less than half (44.4%) of the adults reported that they would be comfortable receiving more than 1 vaccine at the same visit:

> *"Not really comfortable because, if I react to the vaccines, have a reaction, I don't know which one it is. I like to space them out."* – Adult (age 19-49, female, healthy)

> *"I usually try not to receive multiple vaccines. I like to do them on different days in case there are any side effects."* – Adult (age 50-64, female, high-risk)

Relationship with HCP

- Most of the adults (77.8%) reported being satisfied with their HCPs and trusting their recommendations:

> *"…we've formed a relationship and I do trust her, my doctor. And she's very good. I just don't think she would lead me in the wrong direction."* – Adult (age 50-64, female, healthy)

- Trust was identified as an important factor in whether to follow HCPs' recommendations:

> *"If I didn't trust them, I wouldn't take the recommendation so seriously."* – Adult (age 19-49, female, healthy)

> *"I really respect their opinion, so, if I have any questions, I'll ask them."* – Adult (age 50-64, female, high-risk)

Lowering age-based recommendation

- Four adults (44.4%) were in favor of CDC lowering the age recommendation to 50 years and older, allowing healthy adults to get the vaccine before 65 years of age, while 4 adults (44.4%) held a neutral point of view. One adult was against the change in CDC recommendation:

> *"Hey, if CDC recommends, you go ahead and take it."* – Adult (age 65+, female, at-risk)

> *"…I don't think I would be at risk at 50. So I probably wouldn't get it. But I would more strongly consider it when I was getting older. Not because I'm adverse to vaccination, but just like the travel vaccinations. I don't need to get them unless I'm at risk."* – Adult (age 19-49, male, at-risk)

Willingness to receive additional pneumococcal vaccines

- A total of 7 adults (77.8%) were willing to receive a second pneumococcal vaccine for increased disease protection, while the remaining adults were unsure about receiving a second pneumococcal vaccine:

> *"I assume I would because I did with the COVID. I mean, I got the boosters. So I assume I would get any boosters that were available for this one."* – Adult (age 50-64, female, high-risk)

> *"I would if my doctor recommended it."* – Adult (age 65+, male, high-risk)

Limitation

- Due to the qualitative study design, the results may not be generalizable. However, we intentionally sampled a variety of HCPs and adult HCCs with varying age, gender, and practice characteristics (for HCPs)

Conclusions

- Most HCPs support lowering the age recommendation for adult pneumococcal vaccination to 50 years and older
- Some adult HCCs lack awareness of pneumococcal vaccination and pneumococcal disease, and most generally trust their HCPs' recommendations
- Almost half of adult HCCs support lowering the age recommendation for adult pneumococcal vaccination to 50 years and older, and most were willing to receive a second pneumococcal vaccine for increased protection
- Additional quantitative investigations are under way to validate these findings and further explore factors that may influence HCPs' and adult HCCs' knowledge, attitudes, and preferences towards adult pneumococcal vaccination

References

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