

The Value of Invasive Meningococcal Disease Combination Vaccine – A Qualitative Study of Healthcare Providers' Preferences in the United States (US)

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Healthcare Providers' (HCPs) prioritized a combination vaccine with increased vaccination coverage of serogroups A, C, W, Y and B to provide the highest protection against IMD and reduce the burden on adolescents and their parents.

Findings show combination meningococcal vaccinations could significant implications on practice, including increases in compliance and ease of full schedule completion.

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Aims

This qualitative study aimed to identify concepts affecting healthcare providers' (HCP) preferences in decision-making towards current and future Invasive Meningococcal Disease (IMD) vaccines in the US.



Demographics

*HCPs recommended, administered, or prescribed different serogroups of meningococcal vaccines

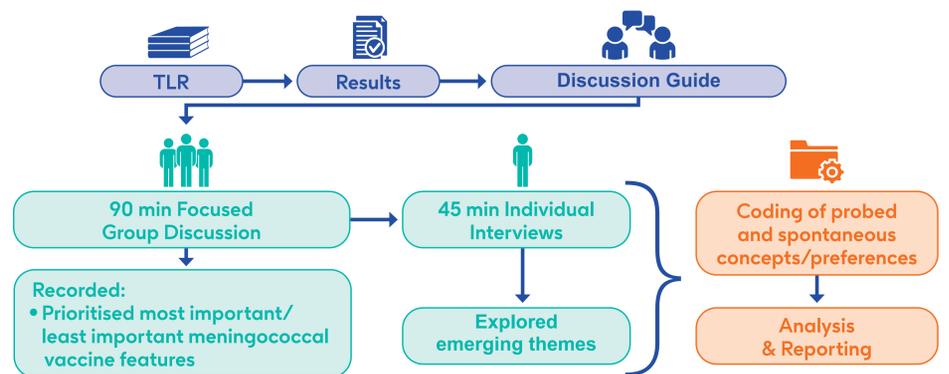
	Gender	Specialty / Experience	% of HCP's with Meningococcal vaccination experience*
Focused Group Discussion (n=5)	Male=3 Female=2	2 Physician 1 Pediatrician, 1 Nurse 1 Internal Med Physician	MenACWY vaccines: 60% MenB vaccines: 60%
Individual Interviews (n=3)	Male=2 Female=1	1 Physician, 1 Pediatrician, 1 General Practitioner	MenACWY vaccines: 67% MenB vaccines: 67%

Study Design

- Eight non-academic HCP's based in the US were invited to participate in either a focus group discussion (n = 5) or in individual interviews (n = 3). Inclusion criteria: Refer Supplementary Table 1
 - Non-academic US HCPs who recommend, administer and/or prescribe a MenACWY and/or a MenB vaccine,
 - Worked at least 20 hours/week in patient care.
- A targeted literature review (TLR) informed the development of the discussion guide.
- Participants were presented with background IMD and vaccines information, followed by a discussion on important/least important features when selecting IMD vaccines (existing and potential future combination) or making vaccination decisions for another person.
- Results were synthesized separately by moderator-probed and spontaneously mentioned themes.
- Percentages were calculated based on the number of participants contributing to a theme. Focused Group Discussion and Individual Interviews were coded to apply thematic assessment.

The study received IRB approval on the date 11/27/2022

Figure 1: Schematic presentation flow of study design



Results

- HCPs valued a combination vaccine covering serogroups A, B, C, W and Y, representing 95% of serogroup B strains in the US (HCPs recommend a combination vaccine: Focused Group Discussion = 100%; Individual Interviews: 100%)
- When choosing a combination meningococcal vaccine, HCPs valued fewer injections to reduce the burden on adolescents and parents (Figure 2).
- HCPs considered fewer visits and time savings associated with the combination vaccine important for enhancing convenience, increasing uptake, and improving compliance.

Figure 2: Top 4 probed factors associated with a combination vaccine versus separate vaccines* and specific HCP's quotes

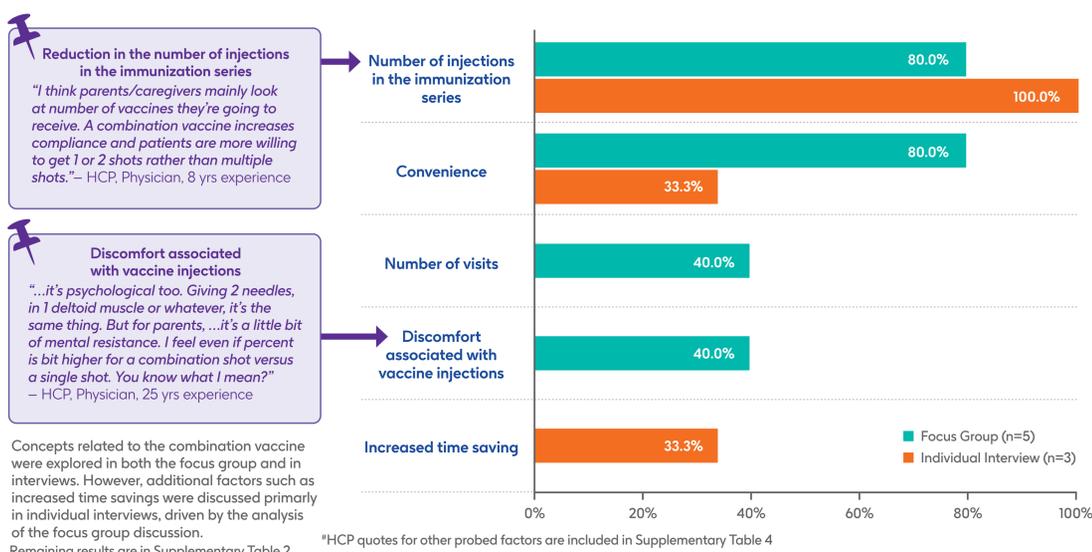
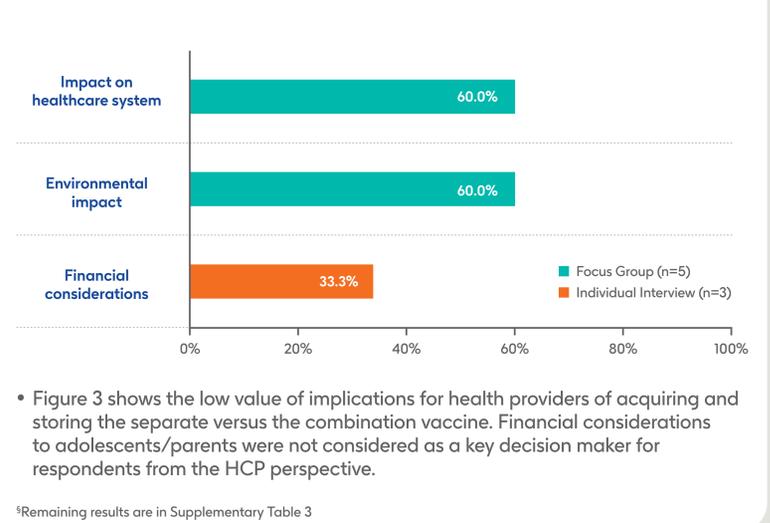


Figure 3: Top 3 least important probed factors associated with a combination vaccine versus separate vaccines[§]



Background

- MenACWY and MenB are commonly used vaccines to prevent IMD, targeting serogroups A, B, C, W, Y⁽¹⁾.
- MenABCWY combination vaccines are under development and could provide increased vaccine coverage of serogroups⁽²⁾
- Disparities in IMD prevention could be caused by inequities in access and may not be effectively addressed by the current vaccination schedule
- Little is known about HCP preferences towards a combination vaccine over separate vaccines in the US

Conclusions

- HCP's interviewed in the US referred a combination meningococcal vaccine with broad serogroup coverage
- Time savings, fewer injections and visits to boost convenience and reduce burden on adolescents/parents were valued by HCPs
- Simplification of current recommendations for prescribing vaccines was acceptable by HCPs

Abbreviations

HCP: Healthcare provider;
TLR: Targeted literature review

References

- Mbaeyi S et al. MMWR Recomm. Rep. 2020;69(9):1
- Marshall G et al. Infect Dis Ther. 2022;11(3):937-951

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Disclosures

SB, ESC, ZK are employed by and hold shares in GSK. LH was employed as freelance by GSK. TK, SCC, LB are employed by IQVIA. IQVIA received funding from GSK to conduct of the study. The authors declare no other financial and non-financial relationships and activities.

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Table 1: Study design and eligibility criteria

Parameter	Inclusion criteria	Exclusion criteria
Healthcare providers (HCPs)	<ul style="list-style-type: none"> Non-academic HCPs who recommend, administer and/or prescribe a MenACWY and/or a MenB vaccine Currently practice in the US, and a board-certified, licensed family physician or general practitioner, internal medicine physician, or pediatrician, or nurse practitioner working in pediatric practices/primary care, and physician assistants in the same settings Worked at least 20 hours/week in patient care Recommended, administered and/or prescribed a MenACWY and/or a MenB vaccination to at least one healthy (not high-risk) person aged 16 – 23 years of age in the past year Aged 18 years or older A US resident Could read and understand English to provide informed consent 	<ul style="list-style-type: none"> Participant who was a resident of a state prohibiting monetary compensation for participation in an observational study among physicians (i.e., Vermont, Maine, Minnesota, or Massachusetts) Any HCP who was practicing in a hospital-based inpatient setting (since these HCPs are rarely in the position to recommend, administer and/or prescribe vaccination, other than flu under standing orders during hospital admission) Any HCP who was practicing in an academic setting (HCPs in academic settings are strong advocates of vaccination and have a better understanding of recommendations for MenB vaccination. This exclusion criterion was aimed to minimize that bias and capture HCPs in outpatient settings)
Participant identification screening consent	<ul style="list-style-type: none"> Potential participants identified via vast and diverse proprietary panels, online channels, including email campaigns, social media, campaigns, mobile apps, direct marketing, and web banners as well as via HCP referrals to ensure the target sample was achieved All eligible participants invited completed an eligibility screener. Those eligible to participate provided remote consent and directed to the scheduling team 	
Study design	<ul style="list-style-type: none"> Information generated by a targeted literature review was used to design qualitative interview guides for focus group discussions with healthcare providers 	

Table 2: Most important factors considered for a combination meningococcal vaccine[§]

Factors	HCP Focus Group (n=5)		HCP Individual Interview (n=3)	
	n	%	n	%
Vaccine characteristics				
Number of injections in the immunization series	4*	80.0%	3*	100.0%
Convenience	4*	80.0%	1*	33.3%
Effectiveness	3	60.0%	ND	-
Side effects or discomfort associated with vaccine injections	2*	40.0%	ND	-
Age of administration	2*	40.0%	ND	-
Dosing interval	2*	40.0%	ND	-
Number of visits	2*	40.0%	ND	-
Cross-protection against other diseases besides meningococcal disease	1*	20.0%	ND	-
History of vaccines	ND	-	ND	-
Faster coverage	ND	-	1*	33.3%
Duration of protection	ND	-	ND	-
Factors related to HCPs				
Compliance	5*	100.0%		2*
Doctors' recommendations	ND	-	ND	-
Factors related to the healthcare system				
Impact on healthcare system	1	20.0%	2*	66.7%
Other factors				
Psychological impact	1*	20.0%	ND	-
Time saving	ND	-	1*	33.3%
Financial impact	ND	-	ND	-
Complete information about the meningococcal vaccine	ND	-	ND	-
Environmental impact	ND	-	ND	-

*n, %, numbers in the table represent participants contributing to discussion

[§]Spontaneous mentions. Participants were able to mention more than 1 most important factor

ND: Not discussed

Table 3: Least important factors considered for a combination meningococcal vaccine[#]

Factors	HCP Focus Group (n=5)		HCP Individual Interview (n=3)	
	n	%	n	%
Impact on healthcare	3	60.0%	ND	-
Environmental impact	3	60.0%	ND	-
Number of visits	2	40.0%	ND	-
Unable to mix with other vaccines	ND	-	1*	33.3%
Exposure to number of serogroups at once	ND	-	1*	33.3%
Dosing interval	ND	-	1	33.3%
Individual financial impact	ND	-	1*	33.3%
Complete information about the meningococcal vaccine	ND	-	ND	-
Cross-protection	ND	-	ND	-
Side effects or discomforts associated with vaccine injections	ND	-	ND	-

*n, %, numbers in the table represent participants contributing to discussion

[#]Spontaneous mentions. Participants were able to mention more than 1 most important factor

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Table 4: Most and least important factors – selected quotes from healthcare providers

Concepts for combination vaccines providing:	Quotes
Most important factors	
Focus group discussion	
Reduction in the number of injections in the immunization series (e.g., 2 or 3)	“I think [parents/caregivers] would mainly look at number of vaccines that they’re going to receive. So a combination vaccine, just increases compliance. Patients are more willing to get 1 shot or a series of 2 shots rather than multiple shots or potentially 4 or 5 vaccines.” – HCP, Male, Physician, 8 years of experience (Focus group)
Discomfort associated with vaccine injections	[Moderator: How does the potential or the risk of side effects factor into your decisions?] “...it’s a little bit psychological too. For me, giving 2 needles, in 1 deltoid muscle or whatever, it’s the same thing. But for parents, it’s kind of like this... it’s a little bit of a mental resistance. I feel like even if the percent is a little bit higher for a combination shot versus a single shot, but you’re only giving 1 needle, you’re not giving 2, so you would think that it’s probably going to reduce it by a little bit. You know what I mean?” – HCP, Male, Physician, 25 years of experience (Focus group)
Convenience	“I think that would be a tremendous benefit in getting people vaccinated if it was a combination. It’s just, it takes the discussion away, basically, or the choice away. If you just say, “Here’s one that covers all the strains you need,” I think patients are a lot more likely than to have to think about multiple vaccines, different schedules.” – HCP, Male, Physician, 8 years of experience (Focus group)
Number of visits	[Moderator: Overall, would you prefer to provide patients with such combination vaccine versus two separate? Why or why not?] “Right now we have a dizzying array of so many vaccines out for so many different things that many people feel overwhelmed and it requires quite a bit of education and time with them for either yourself or your staff to try to get across the key points. Obviously, the more you have together the better it is. That’s why it would be great to have both for the MenB hooked up with the other vaccine that covers for A, B, C, W, X and Y. It would be really, really helpful and improve compliance.” – HCP, Male, Physician, 25 years of experience (Focus group)
Factors related to HCPs	
Reduction in the number of injections in the immunization series (e.g., 2 or 3)	“I like combination vaccines because that’s usually 1 trip, if you can give... Now, some of these vaccines are combined and it really just cuts down on the number of injections you have to do so it’s great, yeah. [...] Kids love it. 1 less needle. [laughs]” – HCP, Female, Physician, 22 years of experience (interview)
Convenience	“...It’s always easier to remember and get completed a 2-vaccine regimen. If it has to be 3, keep it simple and keep... Maybe the company can build in a reminder system to text. Maybe the patient can opt in for texts or email or some other alert system to let them know that they’re due for their vaccine.” – HCP, Female, Physician, 22 years of experience (interview)
Time saving	“Well, this way, you can do it, get them...start getting them protected sooner. Because you give them the... Say you’re doing individual, you do the MenB, then the next week they have to come in and get MenACWY. Then 6 months later they come back for their MenB then they have to come back again a week or 2 later for their MenACWY. It is inconvenient to the patient or the parent bring the child back over...for numerous visits in a short span of time. If you’re able to do just 2 visits and they’re done, it makes it easier on the patient also.” – HCP Male, GP, 28 years of experience (interview)

Concepts for combination vaccines providing:	Quotes
Least important factors	
Focus group discussion	
Impact of healthcare system and environment	[Moderator: (...) Mostly if that kind of attribute, that feature of a combination vaccine, would require less visits to the clinic, and therefore kind of less of your time, less of staff’s time, if that is at all a consideration for your preference for a certain vaccine?] “I agree with my colleague who just spoke a second ago. I don’t think it’s something that I would think about. It’s sort of just following the recommended schedule and the use of combination vaccines would be more because it’s 1 less stick for the patient rather than 1 less syringe to draw up for my staff.” – HCP, Male, Physician, 8 years of experience (Focus group) “Well, I mean, I wouldn’t buy a vaccine just because it has less packaging and less waste. (...) Just like the other physician said, I wouldn’t purchase a whole different vaccine just because the packaging is less. I would go by all the other scientific reasons. It’s kind of like the gravy on top.” – HCP, Female, Pediatrician, 16 years of experience (Focus group)
Factors related to HCPs	
Dosing interval	[Moderator: Would the timeframe between the two doses make a difference for you if there were more than 1 dose for the combination?] “I’m already used to this [dosing interval]. What I have already is a 6-month gap, so if the other one is a 6-month gap so be it. If it’s something different, then we have to see what our options might be. But otherwise, no, not a big deal at all.” – HCP, Male, GP, 28 years of experience (Interview)
Financial considerations	[Moderator: Overall, would you prefer an individual receive the combination vaccine or two separate vaccines as they are now?] “[[Insurance coverage becomes a problem for us, but eventually that gets taken care of.” – HCP, Male, Pediatrician, 32 years of experience (Interview)