Understanding Patient Preferences for Meningococcal Serogroup B Vaccines in the United States

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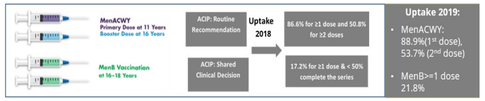
BACKGROUND

In the US, Serogroup B (MenB) was responsible for 62% of cases of meningococcal infection in individuals aged 16-23 years in 2018 and 36% of all IMD cases among all age groups[2].
Recommendation of Meningococcal vaccination in the US and uptake rates of the are significantly different across two types of vaccines (MenB vs. MenACWY vaccine)[1]

Current ACWY Meningococcal Vaccine Recommendations and Vaccine Uptakes [1,3, 5, 6, 7]



As part of the Evidence to Recommendations (ETR) framework, ACIP requires evidence on stakeholders' perspectives –their values and preferences –for the purpose of informing vaccine recommendations.[4]

OBJECTIVE

- To understand population preferences for vaccines against diseases with varying probability of infection and severity of symptoms
- To assess the value of the economic loss of physicians not discussing MenB vaccine with parents/adolescents or young adults
- To estimate the economic value of MenB vaccine in reducing the risk of meningococcal serogroup B disease

METHODS

STUDY DESIGN A web-enabled stated-preference survey based on discreate choice experiment (DCE) design.
PARTICIPANTS Members of the Ipsos national opt-in consumer panel were invited to participate the study via email or via their personalized online portal. Respondents were required to read and understand English, and to meet one of two additional criteria:

- Parents of children aged 12-25 years (N = 1185) or
- Young adults aged 18-25 years (N = 1203)

WHEN AND HOW:

A web-enabled survey instrument collected:

- Participants' demographic information, perceptions of risk of infectious disease with different degrees of severity and risk, and attitudes and behaviors toward vaccines.
- Willingness to accept compensation for not receiving information
- Willingness to pay for additional time with doctor to discuss MenB vaccines
- Willingness to pay for a MenB vaccine

Survey was conducted between July 16, 2019 and October 2, 2019.

DISEASE ATTRIBUTES USED TO INTERROGATE/ELCIT PREFERENCES

Effect of the disease (Moderately ill, Severely ill, Deafness, lost both legs, permanent brain damage, death

Incidence of the disease (1/100, 1/1,000, 1/10,000, 1/100,000, 1/1,000,000)

How the disease spread (Airborne, casual contact, personal contact)

Vaccine Duration of Protection (1, 5, or 10 years)

Cost of Vaccine ($50, $100, $300, $500)

RESULTS: (1) Importance of attributes

Parents	Adolescents and young adults
• 54% of respondents provided logical, well ordered trade-off data for analysis. • Effect of the disease was most sensitive to incidence; recovery from disease at home was least sensitive to incidence. • The importance of airborne versus personal-contact contagion was about the same as a 1 in 1000 chance of deafness versus hospital recovery without sequelae.	• 51% of respondents provided logical, well ordered trade-off data for analysis. • Death from disease was most sensitive to incidence; deafness from disease was least sensitive to incidence. • The importance of airborne versus personal-contact contagion was about the same as a 1 in 100 chance of deafness versus hospital recovery without sequelae.

RESULTS: (2) Vaccine Utility Level in Relation to Effect of the Disease and Incidence

Parents

	Recover Home	Recover Hospital	Deaf	Leg Amputation	Brain Damage	Death
1 in million	0	1.6 (0.4-2.7)	2.8 (1.6-4.1)	3.6 (2.3-4.9)	3.9 (2.6-5.2)	4.3 (3.0-5.5)
1 in 100k	0.6 (-0.8-2.0)	2.4 (1.3-3.5)	3.6 (2.4-4.7)	4.7 (3.5-5.9)	5.2 (4.0-6.4)	5.7 (4.5-6.9)
1 in 10k	1.2 (0.1-2.3)	3.3 (2.2-4.4)	4.3 (3.1-5.4)	5.8 (4.6-7.0)	6.5 (5.3-7.7)	7.1 (5.9-8.4)
1 in 1k	1.7 (0.9-2.6)	4.2 (3.1-5.2)	5.0 (3.8-6.3)	6.9 (5.6-8.2)	7.7 (6.4-9.1)	8.6 (7.2-9.9)
1 in 100	2.3 (1.8-2.9)	5.0 (3.9-6.1)	5.8 (4.3-7.2)	8.1 (6.6-9.5)	9.0 (7.5-10.5)	10

Adolescents and Young Adults

	Recover Home	Recover Hospital	Deaf	Leg Amputation	Brain Damage	Death
1 in million	0	2.9 (1.7-4.0)	4.4 (3.3-5.6)	4.9 (3.7-6.2)	4.8 (3.6-6.0)	5.9 (4.8-7.0)
1 in 100k	0.9 (-0.5-2.4)	3.5 (2.4-4.5)	5.0 (3.9-6.0)	5.8 (4.7-6.9)	5.8 (4.8-6.9)	6.9 (5.8-8.0)
1 in 10k	1.9 (0.8-3.0)	4.1 (3.1-5.1)	5.5 (4.4-6.5)	6.6 (5.5-7.7)	6.9 (5.8-8.0)	7.9 (6.8-9.0)
1 in 1k	2.8 (2.0-3.7)	4.7 (3.7-5.8)	6.0 (4.9-7.1)	7.5 (6.3-8.7)	7.9 (6.7-9.2)	9.0 (7.8-10.2)
1 in 100	3.8 (3.2-4.3)	5.3 (4.3-6.4)	6.5 (5.3-7.8)	8.3 (6.9-9.7)	9.0 (7.5-10.4)	10

About 50% of respondents considered vaccines for low-incidence, high-severity diseases to be at least as valuable as vaccines for high-incidence, low-severity diseases

RESULTS: (3) Willingness to Accept Compensation for No Discussion with Doctor

Hypothetical research scenario
Suppose you are part of a research study and will be randomly assigned to one of 2 groups. *If you were participating in this study, which group would you rather be assigned to?*

Group A
Discussion of MenB vaccine with doctor and option to get the vaccine.
Parents: 77%
Young Adults: 62%

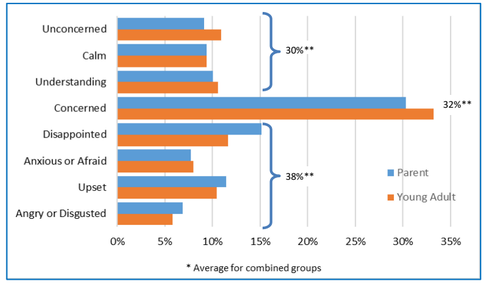
Group B
No discussion. Receive check instead.
Randomized value: $100, $200, $500, or $1000
Parents: 23%
Young Adults: 38%

Reasons for choosing the group that got monetary compensation (Group B)

I would like to receive the money.	39%
I would take the money then research the disease on my own or ask my [child's] doctor about it later.	19%
I trust my [child's] doctor and if my [child's] doctor thought the vaccine was important [for my child], … .	18%
[My child is/I am] not at high risk of getting this disease, so I don't think this matters.	8%
Now that I have learned about the MenB vaccine from this survey, I don't think there is much else I need to know from a consultation with my doctor in order to make an informed decision.	8%
The consultation is not important to me.	3%
Vaccines are not very important to me.	3%
I don't expect my [child's] doctor to tell me about that kind of thing anyway	2%

Reaction to Doctor NOT Discussing Men-B vaccine*

No significant differences between young adults and parents. About 1/3 would feel "Concerned", with similar proportions feeling less concerned and more concerned.

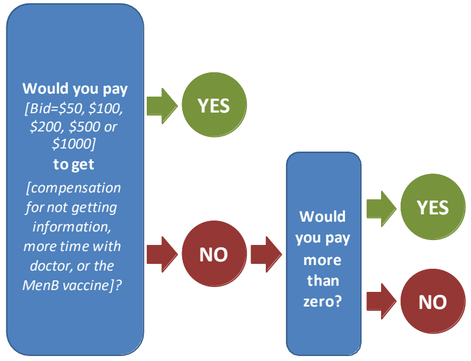


* Answers to question: "Suppose your doctor did not discuss the vaccine with you, so you never knew it was an option. You found out later, when a friend asked whether you got the vaccine. How would you feel about this situation?"
** Average for combined groups

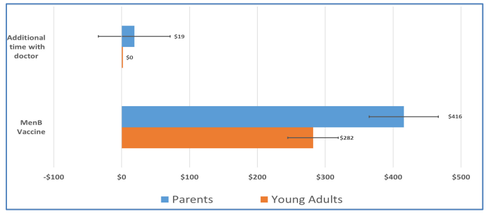
70% of respondents thought their doctor should discuss the MenB vaccine with them

RESULTS: (4) Willingness to Pay for More Time with Doctor to discuss the MenB Vaccine

Single-Bounded Contingent Valuation with Follow-Up

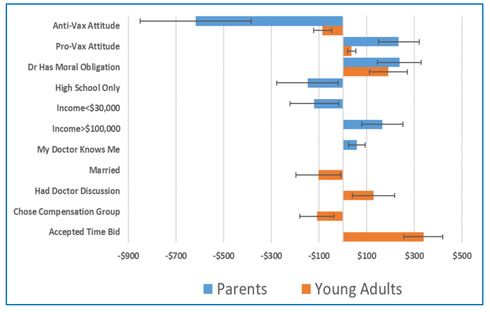


Willingness to Pay for Additional Time with Doctor to Discuss MenB Vaccine and Willingness to Pay for MenB Vaccines



Factors Associated with Willingness to pay (WTP) for MenB Vaccination

The change from the average WTP estimate for each statistically significant covariate is shown below. (Error bars indicate 95% confidence intervals.)



Willingness to pay (WTP) for the MenB vaccine was about $300 for young adults and $400 for parents.

CONCLUSIONS

- This is the first estimate of the economic loss that patients incur when physicians do not discuss MenB vaccination with them. Such losses should be considered in ACIP's vaccine recommendation
- process

Although Meningococcal disease is relatively rare, the value of the meningococcal vaccine to some respondents was higher than the value of vaccines to protect against common but less severe diseases.

- The study fulfilled the Evidence-based Requirement (EtR) from ACIP and can be used as evidence to illustrate the acceptance and values of meningococcal vaccines

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DISCLOSURE:
This study was sponsored by Pfizer, Inc.