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2455. Is Category B Working? Uptake Patterns of Meningococcal Group B Vaccine Among US Adolescents and Young Adults

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Session: 251. Adolescent Vaccines Saturday, October 6, 2018: 12:30 PM

Background. In October 2015, ACIP recommended that serogroup B meningococcal vaccine may be administered to persons aged 16–23 years (age 16–18 preferentially) as Category B (individual clinical decision-making), in addition to the Category A recommendation made in June 2015 for at-risk individuals aged ≥10 years. Currently, MenB vaccine coverage among adolescents and young adults (AYAs), including whether disparities exist, is not well described.

Methods. We performed a cross-sectional analysis of claims data collected by IQVIA and linked to sociodemographic data collected by Experian to estimate overall and subpopulation-level uptake of MenB vaccine (≥2 doses) among AYAs aged 16–25 years as of May 31, 2017.

Results. Among 2,501,188 AYAs aged 10–25 years, MenB vaccine uptake was only 1.4% at the end of May 2017. MenB vaccination varied by age, with uptake of 0.2%, 2.5%, 1.6%, and 0.2% among individuals aged 10–15, 16–18, 19–23, and 24–25 years (P < 0.01), respectively. Lower uptake was observed for non-Hispanic blacks (1.0% vs. 1.4% among non-Hispanic whites, P < 0.01), AYAs in lower income households (1.0% vs. 2.2% among lowest vs. highest income deciles, P < 0.01), and those living in rural (0.6%) or urban/inner-city (0.9%) areas (vs. 1.5% in suburban areas, P < 0.01). The strongest predictors of MenB vaccination were previously receiving quadrivalent meningococcal vaccine (0.6%) or urban/inner-city (0.9%) areas (vs. 1.5% in suburban areas, P < 0.01). Among AYAs aged ≥10 years.

Conclusion. As of May 2017, MenB vaccine uptake among AYAs aged 10–25 years was low (<2%). Even though absolute differences were small, significant disparities in MenB uptake existed. Uptake was notably higher for AYAs who had received ≥2 doses of MenACWY or HPV vaccine. This suggests MenB vaccination is occurring primarily among AYAs who have received other Category A vaccines, and that conversations between clinicians and patients about MenB vaccination—which are at the heart of a Category B recommendation—are limited outside of this context. Given the real-world inadequacies of a Category B recommendation highlighted by our study, future efforts should improve the AYA vaccination platform to ensure adequate immunization of AYAs, especially in underserved communities.

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2456. Immunogenicity and Safety of a MenACWY-CRM Booster Dose 4–6 Years After Primary Quadrivalent Meningococcal Conjugate Vaccine in Healthy US Adolescents and Adults

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Session: 251. Adolescent Vaccines Saturday, October 6, 2018: 12:30 PM

Background. Neisseria meningitidis serogroups A, B, C, W, and Y are a leading cause of bacterial meningitis and sepsis worldwide. Infants <1 year, adolescents and young adults are at the highest risk. The US Advisory Committee on Immunization Practices (ACIP) recommends routine MenACWY conjugate vaccination for adolescents at 11–12 years of age, with a booster dose 5 years later. We examined responses to a booster dose of MenACWY-CRM given 4–6 years after primary vaccination with a licensed quadrivalent meningococcal conjugate vaccine (NCT02983133).

Methods. 602 adolescents and adults aged 15–55 years who had received either MenACWY-CRM (N = 301) or MenACWY-D (N = 301) 4–6 years earlier, and a control group of vaccine-naive participants (N = 102) were enrolled at 37 centers across the US and 701 overall received a single dose of MenACWY-CRM at Day 1, across study groups. Immunogenicity was evaluated pre-vaccination, either 4 or 6 days post-vaccination (sampling subgroups) and 29 days post-vaccination by serum bactericidal activity assay using human complement (hSBA). After vaccination, all participants were to be monitored for 7 days for reactogenicity, 29 days for unsolicited adverse events (AEs), and 6 months for occurrence of medically attended events, AEs leading to withdrawal and serious AEs.

Results. Sufficient of the immune response to a booster dose of MenACWY-CRM was demonstrated as the lower limit of the 1-sided 95% confidence interval for the proportion of participants with hSBA seropositivity for each serogroup at 29 days post-vaccination was >75%, both in participants primed with MenACWY-CRM and MenACWY-D. Independent of quadrivalent meningococcal vaccine priming, >93% of participants achieved a seropositive response at day 29 post-booster. By day 6 post-booster, 47% of primed participants achieved hSBA titers of >1:4, and more likely adolescents (93% for MenW and >85% for MenY, and by day 29 almost all primed participants had seroprotective titers across all serogroups. Overall, the vaccine was well tolerated across participants in all 3 groups and no safety concerns were raised.

Conclusion. MenACWY-CRM induced robust boosting in adolescents and adults primed with a quadrivalent meningococcal conjugate vaccine 4–6 years earlier, with an acceptable clinical safety profile.

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2457. Multivariate Analyses of Socio-Economic Inequities in Parental Awareness and Utilization of Meningococcal Serogroup B Vaccines

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Session: 251. Adolescent Vaccines Saturday, October 6, 2018: 12:30 PM

Background. In 2015, the US Advisory Committee on Immunization Practices (ACIP) made a Category B recommendation for serogroup B meningococcal (MenB) vaccines for adolescents 16–18 years. In 2016, MenB caused ~60% of invasive meningococcal disease among US individuals 16–23 years old; however, utilization of MenB vaccines was much lower than other vaccines with Category A recommendations. Therefore, we examined factors associated with awareness and utilization of MenB vaccines.

Methods. An online quantitative survey was fielded among 619 US parents of adolescents aged 16–19 years, recruited from GfK’s KnowledgePanel in December 2016. Demographics, access to care, decision-making, and vaccine use were collected. A population-based weighting method was applied. Four logistic regressions and Classification And Regression Trees (CART) were conducted to examination most influential factors associated with MenB vaccine awareness and utilization.

Results. Of the weighted sample, 57% were unaware of MenB vaccines (Figure 1). Results from logistic regression models (Table 1) revealed that awareness was likely associated with gender and race. Parents who obtained a recommendation from HCPs were 4.8 (95% CI: 2.5–9.4) times more likely to vaccinate or intend to vaccinate their adolescent and children and 5.7 (95% CI: 2.5–12.9) times more likely adolescents, already vaccinated than those parents who did not receive the recommendation from HCP. Race/ethnicity and insurance type were associated with awareness and vaccine utilization. The results from CART verified that HCPs’ recommendation is the most influential factor to predict the vaccination status of adolescents and their relationship with HCPs were among the most influential predictors of awareness of MenB vaccines or interest in learning about MenB vaccines if they were unaware.

Conclusion. MenB awareness and vaccination are associated with parents’ sociodemographics, clinical status and HCPs’ recommendation. Even among those unaware, there was a willingness to vaccinate when recommended by an HCP. These data underscore the critical need for robust understanding and consistent implementation of ACIP’s Category B recommendation to reduce inequities in MenB vaccine awareness and utilization.
**Figure 1: Study Population Flow Chart**

![Flow Chart Image]

**Table 1: Characteristics of HCP Participants**

|               | MenB only or both MenB & MenACWY Prescribers (N=436) | MenACWY only Prescribers (N=93) | p-value |
|---------------|-----------------------------------------------------|---------------------------------|---------|
| Age Group     |                                                     |                                 |         |
| <35           | 11.5%                                               | 20.4%                           | 0.020   |
| 35-44         | 31.7%                                               | 32.3%                           | 0.909   |
| 45-54         | 33.2%                                               | 25.8%                           | 0.305   |
| 55-64         | 23.2%                                               | 12.9%                           | 0.000*  |
| >65           | 2.5%                                                | 8.6%                            | 0.040   |

**Table 2: Most Important Consideration in HCP’s decision of prescribing MenB or MenACWY vaccine**

| % of HCPs ranking the listed parameters as the most impactful in their decision to prescribe MenB vaccine at 16 years old | To Prescribe | Not to Prescribe |
|-------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|
| Meningococcal vaccine available in the provider’s office                              | 1.1%        | 3.6%            |
| Meningococcal vaccine recommended by ACIP for MenB only at 16 years old               | 1.1%        | 3.6%            |

**Discussion.**

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Session: 251. Adolescent Vaccines
Saturday, October 6, 2018: 12:30 PM

2458. Disparities in Healthcare Providers’ Interpretation and Implementation of ACIP’s Meningococcal Vaccine Recommendations

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**Background.**

Serogroup B is the leading cause of invasive meningococcal disease (IMD) in United States. Among 16–23 year olds, particularly for college students, serogroup B (MenB) disease is greater than serogroups C, W, and Y combined. ACIP recommends routine immunization with MenACWY vaccine (Category A) but a non-routine recommendation based on individual clinical decision-making for MenB vaccine (Category B). Contrasting ACIP recommendations may affect how healthcare providers (HCP) prescribe meningococcal vaccines. We aimed to understand HCPs’ decision process and vaccination practice pattern to prescribe meningococcal vaccines in relation to their experience and interpretations of ACIP recommendations.

**Methods.**

A web-based survey was conducted during August–October 2017 among a nationally representative HCP sample. Univariate analyses were conducted.

**Results.**

Of 529 HCP participants, 436 (82.4%) self-identified as prescribers of MenB only or both meningococcal vaccines, and 93 (17.6%) as prescribers of MenACWY vaccine only (Table 1). When HCPs were asked to rank the most impactful factor in their decision process, 45% ranked guideline considerations as the highest in their decisions to prescribe MenACWY to 16 year olds, followed by disease related factors (36%). For MenB vaccine, 40% ranked disease related factors as the highest, followed by guideline considerations (37%); however, contrasting to MenACWY vaccine (45% vs. 24%), there was no difference (37% vs. 38%) regarding how guideline considerations drove the decision to prescribe or not to prescribe MenB vaccine (Table 2). Overall, HCPs interpreted ACIP’s MenACWY recommendation more uniformly than the MenB recommendation (Figure 1) with majority interpreting MenACWY vaccine as for everyone, whereas MenB was split into for everyone or for a sub-group based on risk factors; ~1/4th of MenACWY only prescribers did not know how to interpret the MenB recommendation.

**Conclusion.**

The ACIP MenB vaccine recommendation is inconsistently interpreted across HCPs and might affect their decision process and vaccination practice pattern to prescribe meningococcal vaccines resulting in disparities in access to MenB vaccines.