

IMPACT OF HEALTHCARE UTILIZATION ON MENINGOCOCCAL ADOLESCENT VACCINATION IN THE UNITED STATES (US)

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BACKGROUND

- Since 2011, the Advisory Committee on Immunization Practices (ACIP) has recommended routine administration of a meningococcal vaccine covering serogroups A, C, W, and Y (MenACWY) for all adolescents, with a primary dose at age 11-12 years and a booster dose at age 16 years¹.
- National Immunization Survey-Teen (NIS-Teen) data suggest that MenACWY uptake remains considerably lower in older adolescents than younger adolescents².
- This study aimed to quantify differences in MenACWY uptake in early adolescence versus late adolescence and evaluate related healthcare utilization factors associated with vaccination and potential missed opportunities.

METHODS

- Retrospective analysis using the MarketScan Commercial Claims and Encounters (Commercial) and Medicaid Multi-State (Medicaid) databases from 2011-2016.
- Study population: adolescents with continuous enrollment between the ages 10.5-13 and 15.5-18 years, respectively.
- Multivariable logistic regression models used to identify factors associated with MenACWY vaccination and related potential missed opportunities within each payer type.
 - MenACWY vaccination identified based on corresponding Current Procedure Terminology (CPT) code/National Drug Code (NDC).
 - A potential missed opportunity defined in unvaccinated individuals as any outpatient preventive care, well-child, or vaccine-only visit during which the patient was age-eligible for a MenACWY vaccine but did not receive it.
- Independent variables included in the models: age group, year of entry into the sample, sex, region (Commercial only), race (Medicaid only), health plan type, number of preventive care/well-child visits, number of outpatient office visits, total number of non-MenACWY vaccines received, urban/rural residence, healthcare costs, and attributed provider type.
- Nonlinear decomposition analyses using a modified Oaxaca-Blinder method³ further used to estimate the individual influence of each covariate in the multivariable logistic regression models on the observed differences in MenACWY uptake and potential missed opportunities in early versus late adolescence.

Disclosures

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CONCLUSIONS

- Receipt of MenACWY vaccines in late adolescence was significantly lower than in early adolescence, even after controlling for demographic and healthcare utilization characteristics.
- This difference was largely attributable to healthcare utilization factors: number of non-MenACWY vaccines received, number of preventive care/well-child visits and type of healthcare provider.
- Older adolescents were significantly more likely to have a potential missed opportunity compared with younger adolescents, but room for improvement exists in both age groups.

- Increasing MenACWY uptake in older adolescents might benefit from solidifying a vaccination platform at ages 16-18 years and supporting adherence to regular preventive care visits.
- Future research should further investigate additional factors driving missed opportunities (e.g., patient refusal, contraindication, lack of provider recommendation, lack of vaccine availability) to design targeted interventions.

RESULTS

Sample Characteristics

- Similar for younger and older adolescents within the same payer cohorts.

MenACWY Uptake, Potential Missed Opportunities, and Missed Preventive Care Encounters by Age Group and Payer (Figure 1)

- MenACWY uptake: consistently higher in early than late adolescence within both payer cohorts.
- A higher percentage of older adolescents had at least one potential missed opportunity compared with younger adolescents.
- Proportion of older adolescents with a missed preventive care encounter was nearly three times higher than in younger adolescents.

Figure 1. MenACWY Uptake, Potential Missed Opportunities^a, and Missed Preventive Care Encounters^b in Younger versus Older Adolescents (A) Commercial and (B) Medicaid

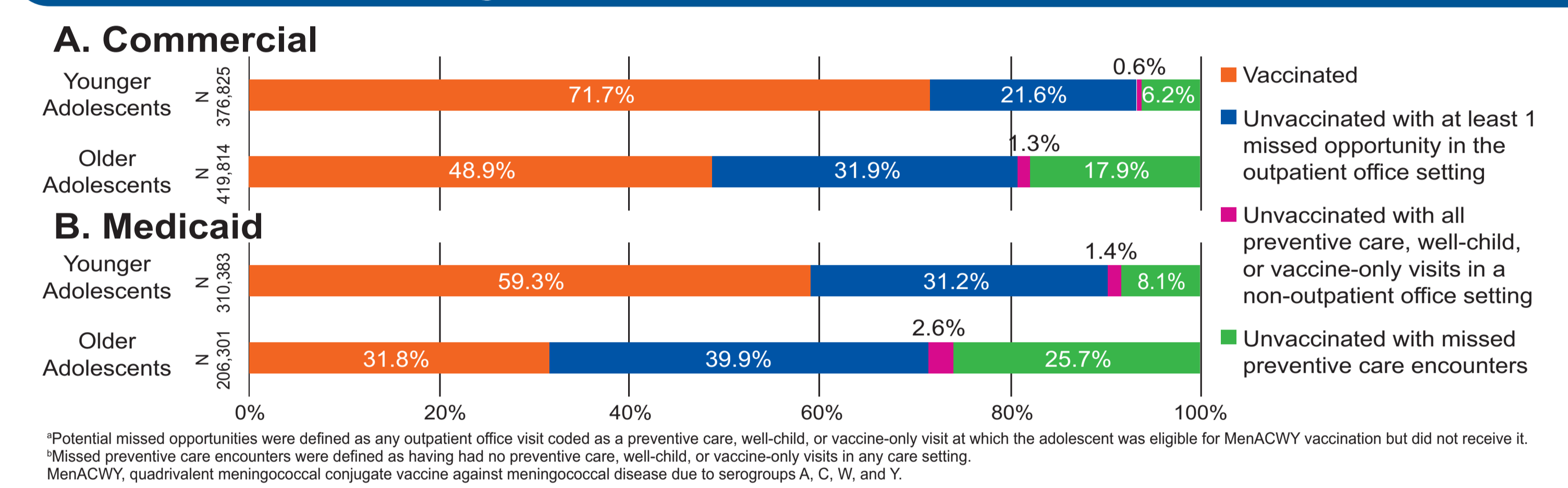
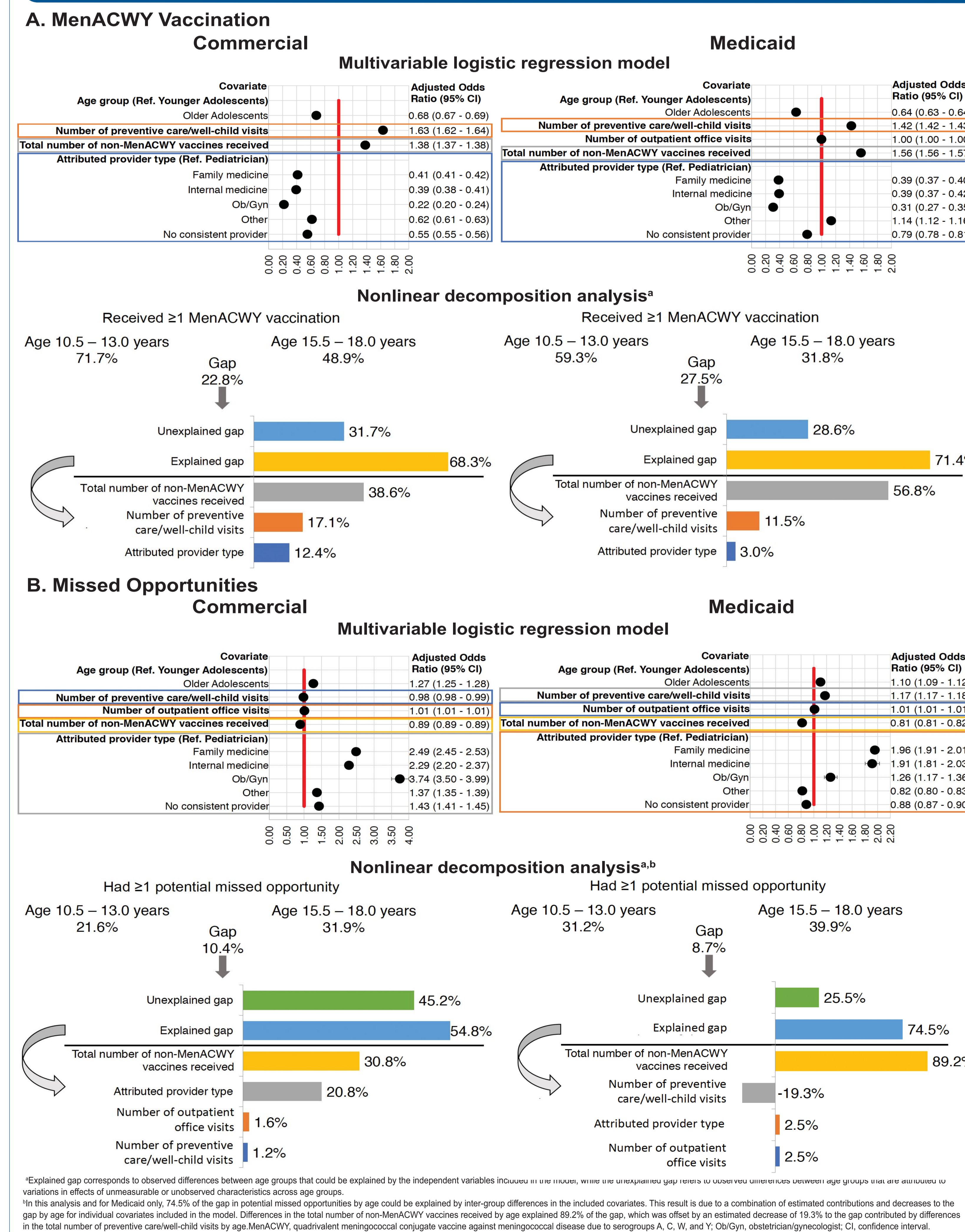


Figure 2. Select Variables Associated with (A) Receipt of ≥ 1 MenACWY Vaccination (B) Having at Least One Missed Opportunity and Differences Observed Between Age Groups (Left) Commercial and (Right) Medicaid



Factors Associated with ≥ 1 MenACWY Vaccination (Figure 2A)

- In multivariable analyses for both payer cohorts:
 - Older adolescents were significantly less likely than younger adolescents to receive a MenACWY dose.
 - Adolescents with a rural residence or non-pediatrician provider were less likely to receive a MenACWY dose.
- Over two-thirds of the observed difference in vaccination uptake between younger and older adolescents may be attributed to fewer non-MenACWY vaccines received, fewer preventive care visits, and primary interaction with non-pediatric healthcare providers.

Factors Associated with Having a Potential Missed Opportunity (Figure 2B)

- In multivariable models for both payer cohorts:
 - Older adolescents were more likely than younger adolescents to have a potential missed opportunity.
 - Adolescents with a rural residence or non-pediatrician provider were more likely to have a missed opportunity.
 - Those who received an increased number of non-MenACWY vaccines were less likely to have a missed opportunity.
- 55% of the observed difference in missed opportunities between younger and older adolescents in the Commercial population, and 71% of the observed difference in the Medicaid population, may be attributed to the total number of non-MenACWY vaccines received (Commercial and Medicaid) and attributed provider type (Commercial only).

LIMITATIONS

- The MarketScan databases do not include information regarding social, cognitive or policy factors (e.g., school entry vaccination requirements) that may influence vaccination behaviors.
- Identifying a vaccination event is limited to encounters which generated a claim in the database.

