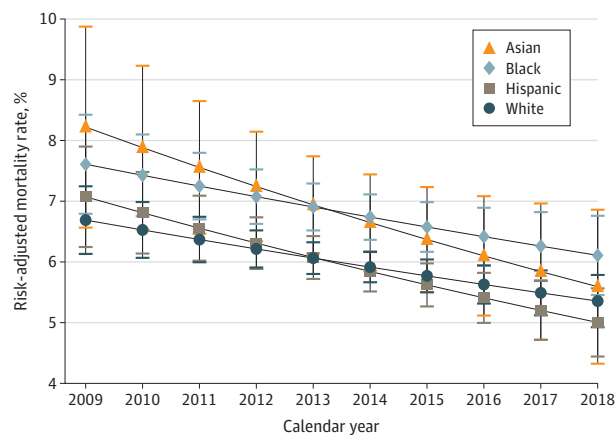


Figure 2. Risk-adjusted Mortality Rates Among Pediatric Patients With Sepsis From 2009 to 2018 Stratified by Race and Ethnicity



Multivariable logistic regression adjusted for sex, age, race and ethnicity, complex chronic conditions, payer status, income, year of admission, transfer status, hospital location and teaching status, region, and bed size. An interaction term between year of admission and race and ethnicity was used to analyze differences in mortality over time ($P = .39$ for Asian; $P = .30$ for Hispanic; $P = .99$ for Black; White as reference). Error bars represent 95% CIs.

all-payer data source to enhance generalizability of the findings.

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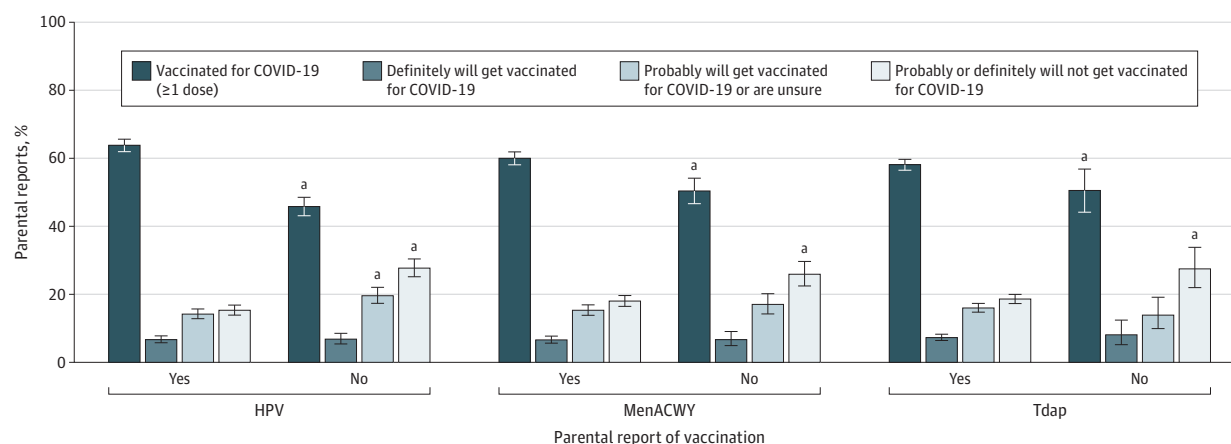
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Associations Between Routine Adolescent Vaccination Status and Parental Intent to Get a COVID-19 Vaccine for Their Adolescent

Although COVID-19-associated illness is generally mild in adolescents, they can experience severe health outcomes, including hospitalization and death.¹ COVID-19 vaccinations are effective for preventing serious COVID-19-associated illness in adolescents.¹ The Advisory Committee on Immunization Practices (ACIP) recommends persons aged 6 months or older receive COVID-19 vaccination.² As of April 14, 2022, among US individuals aged 12 to 17 years, COVID-19 vaccination coverage (≥ 1 dose) was 68%,³ lower than for other vaccines routinely recommended for adolescents.⁴ The ACIP recommends adolescents aged 11 to 12 years receive tetanus, diphtheria, and acellular pertussis (Tdap), meningococcal conjugate (MenACWY), and human papillomavirus (HPV) vaccinations.² This cross-sectional study investigated associations between routine adolescent vaccination status and parental intent or hesitancy to get a COVID-19 vaccine for their adolescent.

Methods | The National Immunization Survey-Child COVID Module (NIS-CCM) is a national telephone survey of households with children or adolescents aged 6 months to 17 years used to measure parent-reported COVID-19 vaccination coverage and intent to vaccinate their child.⁵ The NIS-CCM uses the NIS-Child sampling frame; for adolescents aged 13 to 17 years, it follows the NIS-Teen interview, allowing for analysis of both routine (HPV, MenACWY, and Tdap) and COVID-19 vaccination coverage.⁵ NIS-CCM interviews from July 22, 2021, through February 26, 2022, were analyzed. Survey respondents were those self-reporting being most knowledgeable about the child's vaccinations (hereafter, *parent*). Vaccination status was based on parental report. Data were weighted to represent the noninstitutionalized population of US adolescents and calibrated to administered vaccinations data.³ Analyses were performed using SAS, version 9.4. This activity was reviewed by the CDC and conducted consistent with applicable federal law and CDC policy (45 CFR part 46.102(l)(2), 21 CFR part 56; 42 USC §241(d); 5 USC §552a; 44 USC §3501 et seq). The NIS obtained verbal informed consent at the beginning of each interview. This study followed the AAPOR reporting guideline.

Figure. Parental Report of Routine Vaccination Status and COVID-19 Vaccination Status and Intent for Adolescents Aged 13 to 17 Years



Data are from the National Immunization Survey—Child COVID Module from parent interviews conducted from July 22, 2021, to February 26, 2022, and were weighted to represent the noninstitutionalized population of US adolescents, calibrated to administered vaccinations data. COVID-19 and routine vaccination status (≥1 dose of human papillomavirus [HPV], quadrivalent meningococcal conjugate [MenACWY], and tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis [Tdap]) was parent reported; t tests were performed to assess whether COVID-19 vaccination and intent differed by routine vaccination status and used “yes” as the reference group. COVID-19 vaccination status was based on the parent’s response to the question, “Has [teen] received at least 1 dose of a COVID-19 vaccine?” If the teen had not yet received a COVID-19 vaccine dose, the parent was asked, “Would

you say you would: definitely get a vaccine for [teen], probably get a vaccine, probably not get a vaccine, definitely not get a vaccine, or are not sure?” HPV vaccination status was based on the parent’s response to the question, “Has [teen] ever received HPV shots?” MenACWY vaccination status was based on the question, “Has [teen] ever received a meningitis shot, sometimes called MENACTRA, MENVEO, MenQuadfi, or Menomune?” Tdap vaccination status was based on the question, “Has [teen] ever received a tetanus booster shot?” Children whose parent reported “don’t know” or who were missing responses for the HPV, MenACWY, and Tdap vaccines were excluded from the analysis for that variable.

^a $P < .05$ vs reference.

Table. General Hesitancy About Childhood Vaccination by Parental Report of Receipt of Vaccination for US Adolescents Aged 13 to 17 Years From July 22, 2021, to February 26, 2022^a

General hesitancy about childhood vaccination	Overall, % (95% CI) (N = 12 535)	Adolescents with parent-reported receipt of ≥1 dose of vaccine, % (95% CI) ^b			
		COVID-19 (n = 9667) ^c	HPV (n = 8269) ^d	MenACWY (n = 7467) ^e	Tdap (n = 10 513) ^f
Not at all hesitant	67.6 (66.3-69.0)	65.5 (63.7-67.2)	75.1 (73.5-76.7)	81.6 (80.0-83.1)	94.9 (94.0-95.6)
Not that hesitant	17.2 (16.1-18.3)	50.4 (46.9-53.9) ^g	60.3 (56.6-63.9) ^g	75.6 (71.6-79.1) ^g	93.3 (90.6-95.2)
Somewhat hesitant	11.2 (10.3-12.1)	31.4 (27.8-35.3) ^g	49.7 (45.0-54.5) ^g	70.0 (64.9-74.7) ^g	90.3 (87.0-92.9) ^g
Very hesitant	4.1 (3.5-4.7)	23.8 (18.5-30.0) ^g	37.2 (29.5-45.7) ^g	60.7 (51.2-69.5) ^g	77.6 (69.5-84.0) ^g

Abbreviations: HPV, human papillomavirus; MenACWY, quadrivalent meningococcal conjugate; Tdap, tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis.

^a Data are from the National Immunization Survey—Child COVID Module from parent interviews and were weighted to represent the noninstitutionalized population of US adolescents, calibrated to administered vaccinations data. General hesitancy about childhood vaccination was based on the parent’s response to the question, “Overall, how hesitant about childhood shots would you consider yourself to be? Would you say not at all hesitant, not that hesitant, somewhat hesitant, or very hesitant?” “Not at all hesitant” was the reference group.

^b Children whose parent reported “don’t know” or who were missing responses for the HPV, MenACWY, and Tdap vaccines were excluded from the analysis

for that variable.

^c COVID-19 vaccination status was based on the parent’s response to the question, “Has [teen] received at least 1 dose of a COVID-19 vaccine?”

^d HPV vaccination status was based on the parent’s response to the question, “Has [teen] ever received HPV shots?”

^e MenACWY vaccination status was based on the question, “Has [teen] ever received a meningitis shot, sometimes called MENACTRA, MENVEO, MenQuadfi, or Menomune?”

^f Tdap vaccination status was based on the question, “Has [teen] ever received a tetanus booster shot?”

^g Statistically significantly different from the reference group based on contrast t test for proportions (2-sided $P < .05$).

Results | Of 26 706 administered NIS-CCM interviews, 12 535 (46.9%) were analyzed. Adolescents were more likely to have received at least 1 COVID-19 vaccine dose if they had also received at least 1 HPV, MenACWY, and/or Tdap vaccine dose (Figure). Among parents whose adolescent had received HPV vaccination, 63.8% reported the adolescent had already received COVID-19 vaccination; 6.7%, they definitely would have the adolescent vaccinated; 14.2%, they probably would or were

unsure; and 15.3%, they probably or definitely would not. Similar levels of COVID-19 vaccination receipt and intent were seen among parents whose adolescent had received MenACWY or Tdap vaccination (Figure). Of parents with adolescents who had not received HPV vaccination vs parents of HPV-vaccinated adolescents, a higher proportion reported intent not to vaccinate for COVID-19 (27.7% vs 15.3%) or they probably would or were unsure (19.6% vs 14.2%), and a similar

percentage reported they definitely would (6.8% vs 6.7%). A higher percentage of parents whose adolescents were unvaccinated for MenACWY (25.9%) or Tdap (27.5%) reported their adolescent probably or definitely would not get vaccinated for COVID-19 compared with parents of vaccinated adolescents (18.0% and 18.6%, respectively) (Figure). Routine and COVID-19 vaccination coverage increased with decreasing reported levels of general hesitancy about childhood vaccinations (Table). Adolescents of parents reporting no hesitancy about childhood vaccinations had higher vaccination coverage estimates for all vaccines assessed than did those of parents reporting they were “very hesitant” (percentage point difference: COVID-19, 41.7; HPV, 37.9; MenACWY, 20.9; Tdap, 17.3).

Conclusions | Despite data supporting COVID-19 vaccine safety,⁶ some parents remain hesitant about COVID-19 vaccines. Addressing hesitancy about routine childhood vaccinations may reduce hesitancy about COVID-19 vaccines. A study limitation is that vaccination timing was not assessed, although most adolescents likely received routine vaccinations before the pandemic. Adolescents are due to receive recommended vaccinations at age 11 to 12 years, while the NIS-Teen samples adolescents aged 13 to 17 years. Also, vaccination status was based on parental report and was not validated with medical records to increase the timeliness of data. Continued public health efforts are needed to address vaccine hesitancy among parents.

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Patterns in Prescription Opioids, Benzodiazepines, and Stimulants Filled by Pregnant Medicaid Beneficiaries

Controlled prescription drugs can effectively treat various conditions, including pain, attention disorders, anxiety, and sleeping disorders. The controlled prescriptions, however, have abuse potential and, when used during pregnancy, may increase the risk of adverse perinatal outcomes.^{1–4}

Medicaid is the largest single payer of maternity care in the US, yet little is known about recent controlled prescription patterns among pregnant beneficiaries. Most studies have focused on commercially insured populations or are limited by self-reported, nonrepresentative data.^{2–4} Studies overcoming these limitations have focused on opioids,¹ using



Supplemental content

claims from the Medicaid Analytic eXtract (MAX) that are available for all states up to 2013 and a subset of states from 2014 to 2015.² One study documented that 21.6% of pregnant Medicaid beneficiaries filled prescription opioids between 2000 and 2007.²

Since then, controlled prescription drug access has changed with the Patient Protection and Affordable Care Act Medicaid expansions and prescription drug regulations aimed at addressing the opioid crisis. Therefore, understanding recent controlled prescription patterns among pregnant Medicaid beneficiaries is crucial to inform health care and drug policy. We combined nationally representative Medicaid claims from the Transformed Medicaid Statistical Information System Analytic Files and MAX with the aim to generate updated estimates of opioid prescriptions and the first estimates of benzodiazepines and stimulants filled by pregnant Medicaid beneficiaries and identify patterns. Pregnancy characteristics were also examined.