

Patterns of Primary Care Physician Visits for US Adolescents in 2014: Implications for Vaccination

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ABSTRACT

OBJECTIVE: Because most adolescent vaccinations are delivered in primary care, opportunities to vaccinate depend on the presence of visits and types of visits. We evaluated: 1) national visit patterns (having an annual preventive visit with a physician, provider type seen, visit types) for adolescents across the United States, and 2) the type of physician visits at which vaccines are administered for this age group.

METHODS: We performed a secondary data set analysis of the 2014 Medical Expenditure Panel Survey. Data are collected through interviews of caregivers of a nationally representative sample of the noninstitutionalized US population. We used descriptive analyses to examine use of health care according to age and gender, and visit types at which vaccines were given according to age.

RESULTS: During a 12-month period, almost half of participants had no primary care physician (PCP) visits, and one-third had a preventive visit to a PCP. An additional 19% had only nonpreventive care visits to a PCP. Uninsured participants had the highest rate of no care, and the lowest rate of preventive

care. Most preventive care visits by adolescents 11 to 17 years of age were to pediatricians, and most visits among those 18 to 21 years of age were to family/general practitioners. Overall, 67% of non-check-up PCP visits were for acute care, 10% were for follow-up, and 7% for immunization only. Nationally, 61%, 26%, and 12% of vaccines were given at preventive, immunization-only, and acute/follow-up visits, respectively.

CONCLUSIONS: Fewer than half of adolescents receive preventive care, and many have no PCP visits. This reinforces the need to offer outreach to adolescents to improve rates of preventive visits, and to take advantage of all primary care visits for vaccinations. Because pediatricians and family practice/general practice physicians vaccinate most adolescents, these providers should remain the target audience for vaccine education and quality improvement activities.

KEYWORDS: adolescent health services; utilization; vaccinations

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THERE HAVE BEEN multiple changes in the adolescent immunization schedule over the past decade, including recommendations for meningococcal conjugate, tetanus-diphtheria toxoid acellular pertussis (Tdap), human papillomavirus (HPV), and influenza vaccines.¹ Vaccination rates for HPV and influenza are suboptimal,² in part because of lack of provider recommendations for vaccination, parental concerns of vaccine safety, and lack of knowledge about vaccines.³ Although the primary indication for vaccine recommendations is on the basis of epidemiologic features of protection or evidence of waning immunity, it is also important to understand health care utilization patterns for adolescents; this ensures that the appropriate audience of physicians is targeted for education and practice change. In addition, understanding which adolescents fail to receive primary care physician (PCP) visits nationally can help in targeting outreach to specific populations; it is known that having an 11- to 12-year-old preventive visit is associated with higher rates of HPV vaccine initiation.⁴

Despite recommendations from the American Academy of Pediatrics and American Academy of Family Physicians for adolescents to have an annual preventive visit to provide screening, immunizations, and to assess and counsel about risky behaviors, previous studies have shown that fewer than 50% of adolescents receive a preventive visit during any year.^{5–9} A 2007 National Ambulatory Medical Care Survey study showed that younger adolescents were more likely to have preventive visits compared with older adolescents, and these preventive visits were most likely to pediatricians (rather than other types of providers), whereas visits for older female adolescents were to obstetrician-gynecologists (Ob/Gyns), and visits for older male adolescents declined dramatically.¹⁰

With expanding insurance coverage, focus on primary care, and attention to immunizations, it is possible that these utilization patterns have changed. Preventive visits among commercially insured adolescents increased from 2003 to 2010, likely in part because of new vaccine

recommendations.⁵ A recent study comparing pre-Affordable Care Act (ACA) with post-ACA rates reported an increase from 41% to 48% in preventive care visits,¹¹ which could be driven by higher rates of insured individuals. However, little is known about visit types in which vaccines are delivered for adolescents. The goals of the present study were to: 1) provide an updated assessment of which individuals aged 9 to 21 years (referred to hereafter as adolescents) receive a checkup from a physician at each age and by which physician specialties, 2) examine at what type of visits vaccines are delivered by PCPs, and 3) evaluate which physicians give vaccines to adolescents. The overall goal was to provide a comprehensive picture of PCP utilization in the US adolescent population to better understand the population that might be in need of vaccine education. Further, understanding preventive care utilization among adolescents might help efforts to target vaccinations during acute or follow-up visits to minimize missed opportunities for vaccination. Nurse-only and nurse practitioner visits are not included in this study, because visits to these providers are combined in the Medical Expenditure Panel Survey (MEPS) and their office specialty is not defined.

METHODS

STUDY DESIGN

We conducted a cross-sectional analysis of the most recent MEPS database to assess health care utilization to PCPs for adolescents related to vaccination.

DATA SOURCE

We used the Agency for Healthcare Research and Quality 2014 MEPS for this analysis. The MEPS is a nationally representative survey of health care use, expenses, and insurance coverage in the United States. The MEPS Household Component was used for the data source. Parents (for participants younger than 18 years) are asked about any health care visits for their child in the past 12 months, the primary reason for the visit, the provider type seen, and which services the child received at the visit, including any vaccination. Participants older than age 18 years answer questions for themselves. To reduce problems associated with long recall periods, data are collected several times a year, and respondents are asked to keep a calendar of medical events and to supply supporting paperwork regarding those events; this likely results in a more accurate assessment than other data sets.¹²

POPULATION

Because the HPV vaccine is recommended for all at age 11 to 12 years, but is permissively used for those as young as 9 years, we analyzed the data set for children, adolescents, and young adults, ages 9 to 21 years. Age was defined as the respondent's age on December 31, 2014. This age group is inclusive of recommendations for other adolescent vaccines (Tdap, meningococcal, influenza) too.

VARIABLES

We included the following specialties as PCPs: family practice/general practice (FP/GP, combined), Ob/Gyn, internal medicine, and pediatrics. Preventive visits were defined as a "general checkup" with a PCP (the term "well child visit" in the database is reserved for children 7 years of age or younger).

ANALYSIS

We examined the percent of adolescents who had preventive care visits with a PCP in 12 months, which provider type performed those visits, what percent of adolescents see a PCP, what types of visits PCPs perform, and the visit type at which a vaccination was delivered for adolescents during a PCP visit. We adjusted all analyses for the complex stratified survey design of the MEPS and reweighted to ensure nationally representative estimates. We used STATA version 12.0 (StataCorp, College Station, Texas).

RESULTS

The unweighted study sample included 6960 US adolescents aged 9 to 21 years, which extrapolates to a population of 54,722,211. As shown in [Figure 1](#), on average, 46% of participants have no PCP visits in 12 months. The proportion of adolescents with no PCP visits ranges from a low of 33% for 9-year-old girls, to a high of 75% for 21-year-old male adolescents. Overall, 54% of adolescents aged 9 to 21 years have visits to PCPs, and 35% have an annual preventive visit with a PCP. Preventive visit rates decline dramatically after age 16 years, and are lowest at age 21 years, when only 14% of female and 12% of male adolescents have a preventive visit in 12 months. On average, 19% of adolescents have only nonpreventive care visits to PCPs, ranging from 11% (for 15-year-old male adolescents) to 27% (for 20-year-old female adolescents).

[Figure 2](#) shows utilization patterns according to patient demographic characteristics. Rates of preventive visits are lower (30% vs 39%) and lack of PCP visits is higher (52% vs 42%) for those with income at or below 200% of the federal poverty limit compared with those with higher incomes. Rates for privately and publicly insured adolescents are similar for preventive visits (37% for each), but slightly more publicly insured adolescents lack PCP visits (46%) compared with privately insured adolescents (43%). Uninsured adolescents are least likely to have preventive visits (8%), and most likely to have no PCP visits at all (80%) during a 12-month period.

[Figure 3](#) shows types of physicians seen by adolescents who make preventive visits. As shown, preventive visit utilization varied substantially according to age and gender. More than two-thirds of preventive visits for those aged 9 to 16 years are performed by pediatricians; this rate declines as teens age. FP/GPs see 16% to 31% of male patients aged 9 to 16 years, but from age 17 to 21 years, FP/GPs see 43% to 82% of male patients for preventive visits. FP/GPs see 16% to 39% of 9- to 16-year-old female adolescents for preventive visits, and 25% to 63% from age

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