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# Association Between Adolescent Preventive Care and the Role of the Affordable Care Act

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**IMPORTANCE** Despite decades of adolescent preventive well visit and services promotion (Guidelines for Adolescent Preventive Services and *Bright Futures*), rates are below recommended levels and little is known of the effect of the Patient Protection and Affordable Care Act (ACA) implementation on these care rates.

**OBJECTIVES** To use Medical Expenditure Panel Survey data to determine (1) whether adolescent well visit rates increased from the pre-ACA period to post-ACA period, and (2) whether caregivers' reports of past-year preventive services delivery increased from the pre- to post-ACA period among adolescents with any past-year health care visit.

**DESIGN, SETTING, AND PARTICIPANTS** Secondary data analysis of 2007-2009 (before ACA implementation) and 2012-2014 (after ACA implementation) Medical Expenditure Panel Survey data on the differences in well visits and preventive services. Data were collected through computer-assisted personal interviews of caregivers of a nationally representative sample of a noninstitutionalized US population (n = 25 695 10- to 17-year-old adolescents).

**MAIN OUTCOMES AND MEASURES** For objective 1, pre- to post-ACA period differences in past-year well visits: (1) stratified bivariable logistic regressions identifying subgroup rate differences and (2) multivariable analyses controlling for demographic factors. For objective 2, pre- to post-ACA period differences in caregiver reports of preventive services receipt, including time alone with clinician: (1) bivariable (year differences) and (2) multivariable logistic regressions controlling for demographic variables.

**RESULTS** A total of 6279 (50.9%) and 6730 (50.8%) participating adolescents in the pre- and post-ACA period data were male, respectively. Under objective 1, we found that well-visit rates increased from 41% to 48% post-ACA implementation (odds ratio, 1.3; 95% CI, 1.2-1.5); minority and low-income groups had the greatest increases. Under objective 2, we found that among those with any past-year visit, most preventive services rates (8 of 9) increased post-ACA implementation (range, 2%-9%, absolute), with little or no change when controlling for demographic variables. Time alone with clinicians increased 1%, significant only when covariates were controlled (adjusted odds ratio, 1.2; 95% CI, 1.0-1.3).

**CONCLUSIONS AND RELEVANCE** Despite modest to moderate increases, with greatest gains for underserved youth, adolescent preventive care rates remain low, highlighting the need for increased efforts to bring adolescents into well care and improve clinician delivery of preventive care within their practices.

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Many causes of adolescent morbidity (substance use, sexually transmitted infections and other sexual health issues, obesity, and hearing loss) and mortality (motor vehicle crashes, violence, and suicide) are preventable, making the second decade of life a critical time for preventive interventions, including interventions in the clinical setting.<sup>1,2</sup> For more than 2 decades, professional health organizations have recommended the delivery of preventive services to adolescents, usually in the context of an annual well visit.<sup>3</sup> Guidelines issued by the American Academy of Pediatrics in 2017 (*Bright Futures*) present comprehensive recommendations for preventive care services up to age 21 years, including delivery of adolescent preventive services in an annual visit.<sup>4</sup> Research supports the effectiveness of clinical preventive services in several areas in improving adolescent behavioral and mental health outcomes. For example, the US Preventive Services Task Force recommends screening for tobacco use, depression, and obesity, among other areas.<sup>5</sup> Promising research suggests that preventive services improve adolescent outcomes in additional areas such as nutrition, suicide risk, substance use, and physical activity.<sup>6-9</sup>

Although the evidence base and professional guidelines support the delivery of preventive services to adolescents, receipt of recommended preventive services remains low. According to results of a study using the 2001-2004 Medical Expenditure Panel Survey (MEPS), rates of anticipatory guidance among adolescents who had received a past-year well visit were low, ranging from 31% for seatbelts to 49% for healthy eating.<sup>10</sup> Chlamydia screening, a US Preventive Services Task Force grade B recommendation, also remains low (47%-55% in 2014) among sexually active females ages 16 to 24 years.<sup>11</sup> Despite longstanding support for an annual well visit in professional guidelines, analyses of several national surveys from 2011 found rates of past-year well visits among adolescents to be as low as 43%.<sup>12</sup> The analysis of 2001-2004 MEPS data showed a rate of 39%.

Research and professional guidelines also support provision of confidential care and time alone with a clinician, which are critical components of preventive services for adolescents. Time alone with a clinician gives adolescents the opportunity to learn to interact independently with their clinician as well as the opportunity for discussion of sensitive issues, as needed. Several studies indicate that adolescents will forego needed care without assurance of confidentiality.<sup>13-17</sup> Despite the support of several professional organizations for this aspect of quality care,<sup>18-21</sup> the analysis of 2001-2004 MEPS data indicated that barely a third of adolescents with a past-year well visit spent any time alone with a clinician, making it unlikely that sensitive topics, such as sexual health and substance use, were addressed.<sup>10</sup> This finding may be an underestimation because the time alone query only includes consideration of the last health care visit of an unclear nature.

In the context of a strong evidence base and professional consensus, the Patient Protection and Affordable Care Act (ACA), enacted in 2010, requires that most private insurers cover many preventive services with no copay, including the services recommended by the American Academy of Pediatrics (*Bright Futures*)<sup>4</sup> and the US Preventive Services Task Force, grades A and B, as part of a larger focus on prevention through

## Key Points

**Question** Has the provision of preventive care for adolescents, in terms of a preventive well visit and preventive services, increased since implementation of the Affordable Care Act?

**Findings** This secondary data analysis of the Medical Expenditure Panel Survey, a national survey, showed that rates of preventive well visits for adolescents 10 to 17 years of age increased from 41% (2007-2009) to 48% (2012-2014). Among adolescents who received any health care visit in the past year, 8 of 9 preventive services rose, with increases ranging from 2% to 9%.

**Meaning** Preventive care rates have increased moderately or modestly; however, most adolescents did not receive past-year well visits or most preventive services.

out the ACA.<sup>22</sup> Since the ACA's enactment, to our knowledge, few studies have examined the provision of preventive services among adolescents and we are unaware of any studies examining the provision of confidential care.

In this context, the goal of this study was to examine, in a nationally representative sample of adolescents, changes in the receipt of a well visit and the content of care among those who had any health care visit. Specifically, the present study has 2 objectives: (1) assess whether the receipt of a past-year well visit increased among adolescents after the ACA's passage and (2) assess, among adolescents who received any type of health care visit in the past year, whether the receipt of selected preventive services and time alone with a clinician increased after the ACA's passage and whether findings were affected by controlling for demographic covariates. Analyses used MEPS data from 2007-2009 as the pre-ACA period and 2012-2014 as the post-ACA period.

## Methods

### Study Design and Sampling

Sponsored by the Agency for Healthcare Research and Quality, MEPS is a set of household surveys of health, insurance coverage, and health care use and expenditures for the US civilian non-institutionalized population. The MEPS is conducted annually and uses an overlapping panel design: each annually recruited panel of respondents participates for 2 years. Participants signed consent authorization forms. The present analysis used 3 MEPS data sets; the Full-Year Consolidated Data included all study variables except those needed to develop the well-care visit variable, which were drawn from the Office-Based Medical Provider Visits and Outpatient Visits files. The study protocol was approved by the Committee on Human Research at University of California, San Francisco, under the exempt status.

### Participants

The analyses used data from the subsample of respondents that were caregivers of adolescents ages 10 to 17 years. To ensure adequate sample sizes, we pooled data from 2007-2009 (n = 12 375) and 2012-2014 (n = 13 320) for a full sample size of 25 695. Adult caregivers, most frequently a parent, answered

questions about adolescents' health, health insurance, and health care use and associated expenditures in the past year.

### Objective 1

Under objective 1, we assessed whether rates of past-year well visits increase from the pre-ACA (2007-2009) to post-ACA (2012-2014) period. The outcome variable was the receipt of a well visit within the past year vs none, coded from respondent medical office-based and outpatient health care visits. The MEPS respondents maintained calendars to track their health care visits that included visit dates, clinician name and type, and primary reason for visit. Based on previous research, visits were recoded as a well visit if the main reason for the visit was a general checkup, well-child examination, or receipt of immunizations or shots.<sup>10,12,23</sup> The well-visit variable was coded as having at least 1 of these visits vs none.

Independent variables were the survey years recoded into either the pre-ACA (2007-2009) or post-ACA (2012-2014) period. Stratified analyses of visit rates were conducted for race/ethnicity, income level, and health insurance status subgroups. Race/ethnicity and income group variables were provided in the MEPS data. The MEPS oversamples policy-relevant participants including black, Hispanic, and lower-income subgroups. Race/ethnicity was coded as non-Hispanic white (referred to as white), non-Hispanic black (referred to as black), non-Hispanic Asian (referred to as Asian), Hispanic, and non-Hispanic other (referred to as other). The "other" subgroup was included in the primary outcomes but not in the stratified subgroup analyses. The MEPS income level was coded into 4 Federal Poverty Level (FPL) categories (1: <100% FPL; 2: 100% -<200% FPL; 3: 200% -<400% FPL; and 4: ≥400% FPL). Insurance status was recoded from monthly insurance status into a past-year variable: 12 months of private insurance coverage was recoded as full-year private coverage; 12 months of public coverage was recoded as full-year public coverage; at least 1 month but less than 12 months of any coverage was recoded as partial-year uninsured; and 12 months without any coverage was recoded as full-year uninsured. A small percentage reported 12 months of insurance either with both private and public insurance or some combination. These 2 groups were included in the primary outcomes but not in stratified subgroup analyses.

Covariate demographic variables used in the multivariable analyses included age, sex, geographic region, and race/ethnicity (excepting the stratified race/ethnicity outcomes), income group (excepting the stratified income group analyses), and insurance status (excepting the stratified insurance group analyses).

### Objective 2

Under objective 2, we assessed whether preventive services rates, among those with any past-year health care visit, increased from the pre-ACA (2007-2009) to post-ACA (2012-2014) period. This objective used the adolescent subsample that had any health care visit in the past year (2007-2009: n = 7740; 2012-2014: n = 8559; and total: N = 16 299).

Outcome variables were preventive services items: measurement of physical parameters (height, weight, and blood pressure) and delivery of anticipatory guidance to the adoles-

cent or parent in 6 areas (healthy eating, physical activity, seat-belt use, helmet use, second-hand smoke, and dental visits). Summary measures of whether the adolescent had all 3 physical parameters measured (yes vs no) and received anticipatory guidance in all 6 areas (yes vs no) were developed. The time alone with a clinician at the most recent health care visit variable was included as a separate variable (ages 12-17 years old). All were compared between the pre- and post-ACA periods. The independent variable was pre- vs post-ACA status, as described in objective 1. Covariate variables were the same as those listed for objective 1.

### Statistical Analysis

All analyses were conducted using statistical weights to provide estimates reflecting national population totals. Weights are equal to the inverse of the sampling probability for each case, adjusted for nonresponse. Analyses also included variables adjusting for the sampling strata and primary sampling units used in the MEPS complex survey design.  $\chi^2$  Analyses were conducted to determine pre- to post-ACA differences in sex, race/ethnicity, income, insurance, and region.

For objective 1, bivariable logistic regression analyses were conducted to determine differences in well visits between pre- to post-ACA periods (model 1) and multivariable analyses controlled for covariate sociodemographic variables (model 2). For objective 2, bivariable logistic regressions were conducted to determine pre- to post-ACA differences in preventive services (model 1). Using multivariable analyses, model 2 controlled for demographic covariates. To assure accurate estimation of outcomes in the stratified and subgroup analyses, all statistical models included all persons represented in the MEPS data sets. Analyses were conducted using SAS (SAS Institute Inc) and SUDAAN (RTI International) software that takes into account the MEPS complex survey design.<sup>24</sup>

## Results

Demographic and insurance profiles varied significantly from the pre- to post-ACA periods. There were significant post-ACA period increases in full-year public coverage (4071 [23%] vs 5929 [29.8%] in the pre- vs post-ACA periods;  $P < .001$ ) and significant decreases in partial- (1981 [13.7%] vs 1699 [11.2%];  $P < .001$ ) and full-year uninsured status (1245 [9%] vs 922 [5.3%];  $P < .001$  in the pre- vs post-ACA periods) (Table 1). In addition, the Hispanic subgroup had significantly increased representation in the post-ACA group (4203 [19.8%] vs 5364 [22.8%] in the pre- vs post-ACA periods;  $P = .005$ ).

### Objective 1: Differences in Past-Year Well Visit Rates From the Pre- to Post-ACA Period

Past-year well visit rates increased from 41% before the ACA to 48% after the ACA (difference, 7%; 95% CI, 1.2%-1.5%;  $P < .001$ ) (Table 2). Stratified analyses showed increases within racial/ethnic groups (white adolescents: 6%, 95% CI, 1.1%-1.5%,  $P < .001$ ; black adolescents: 10%, 95% CI, 1.3%-1.8%,  $P < .001$ ; and Hispanic adolescents: 10%, 95% CI, 1.4%-1.7%,  $P < .001$ ); within income groups (<100% FPL: 10%, 95% CI, 1.3%-1.8%,

**Table 1. Rates and Differences in Demographic Factors and Health Care Access Among Adolescents (Ages 10-17 Years): Medical Expenditure Panel Survey for the Pre- (2007-2009) and Post-ACA (2012-2014) Periods**

Variable	Unweighted No. (Weighted %)		$\chi^2$ P Value
	Pre-ACA Period	Post-ACA Period	
Sex			.95
Male	6279 (50.9)	6730 (50.8)	.94
Female	6096 (49.1)	6590 (49.2)	.94
Race/ethnicity			.01
Non-Hispanic white	4413 (57.7)	3738 (53.4)	.004
Non-Hispanic black	2739 (14.9)	2878 (14.4)	.45
Non-Hispanic Asian	579 (3.8)	745 (4.6)	.06
Hispanic	4203 (19.8)	5364 (22.8)	.005
Non-Hispanic other	441 (3.7)	595 (4.8)	.08
Income group			.06
<100% FPL	3309 (16.6)	4202 (18.1)	.07
100-<200% FPL	3402 (20.7)	3556 (21.6)	.27
200-<400% FPL	3428 (33.4)	3415 (30.9)	.03
≥400% FPL	2236 (29.4)	2147 (29.4)	.98
Insurance status			<.001
Full-year private insurance	4756 (51.8)	4410 (50.7)	.47
Full-year public insurance	4071 (23.0)	5929 (29.8)	<.001
Partial-year uninsured	1981 (13.7)	1699 (11.2)	<.001
Full-year uninsured	1245 (9.0)	922 (5.3)	<.001
Full-year private and public insurance	197 (1.7)	224 (1.8)	.53
Full-year insured with either private or public insurance	125 (0.8)	136 (1.1)	.15
Region			.83
Northeast	1863 (17.6)	1417 (16.7)	.56
Midwest	2434 (21.7)	1665 (21.0)	.67
South	4620 (36.9)	3388 (38.5)	.37
West	3458 (23.8)	2654 (23.9)	.99

Abbreviations: ACA, Affordable Care Act; FPL, Federal Poverty Level.

$P < .001$ ; 100-<200% FPL: 9%, 95% CI, 1.3%-1.7%,  $P < .001$ ; and 200-<400% FPL: 8%, 95% CI, 1.2%-1.6%,  $P < .001$ ; and within insurance groups (full-year privately insured: 5%, 95% CI, 1.1%-1.4%,  $P < .01$ ; full-year publicly insured: 10%, 95% CI, 1.3%-1.7%,  $P < .001$ ; and partial-year uninsured: 5%, 95% CI, 1.0%-1.5%,  $P < .05$ ). For the most part, these findings remained significant in model 2, adjusting for covariates.

### Objective 2: Pre- to Post-ACA Differences in Receipt of Past-Year Preventive Services Among Those With Any Health Care Visit

Pre- to post-ACA unadjusted preventive services rates increased significantly (model 1) for all 3 measurement parameters (height: 2%, 95% CI, 1.1%-1.4%,  $P < .01$ ; weight: 2%, 95% CI, 1.1%-1.5%,  $P < .01$ ; and blood pressure: 7%, 95% CI, 1.3%-1.7%,  $P < .001$ ) and for measurement of all 3 parameters (7%; 95% CI, 1.3%-1.6%;  $P < .001$ ) (Table 3). Five of 6 anticipatory guidance areas and the sum measure of all 6 areas increased significantly (model 1) (healthy eating: 9%, 95% CI, 1.3%-1.6%,  $P < .001$ ; physical activity: 9%, 95% CI, 1.3%-1.6%,  $P < .001$ ; seat-belt use: 5%, 95% CI, 1.1%-1.5%,  $P < .001$ ; helmet use: 3%, 95% CI, 1.0%-1.3%,  $P < .05$ ; dental visit: 6%, 95% CI, 1.1%-1.4%,  $P < .001$ ; and all 6 areas (2%; 95% CI, 1.0%-1.5%;  $P < .05$ ). Over-

all, controlling for covariates resulted in little or no attenuation of results (model 2). Time alone with a clinician increased 1% from the pre- to post-ACA period but was only significant in the analysis adjusting for covariates (95% CI, 1.0%-1.3%).

## Discussion

This study provides a comprehensive assessment of well visits receipt and content of care among a national sample of adolescents from pre- to post-ACA implementation. Overall, the analysis demonstrated modest to moderate significant post-ACA period increases in receipt of a past-year well visit and in 8 of 9 individual preventive services. While these findings indicate increases in preventive care, they also illustrate ongoing gaps: less than half of adolescents attended a well visit and a similar proportion received anticipatory guidance among those receiving any health care visit in the past year.

Pre- to post-ACA increases in the receipt of a well visit were greatest for adolescents in underserved groups—including minority adolescents, those in lower-income families, and those with full-year public insurance—indicating that the ACA provisions decreased health care inequities. Despite gains for these groups, their well-visit rates are still lower than those of their more advantaged counterparts.

The higher well-visit rate among full-year insured adolescents compared with uninsured adolescents indicates that insurance matters. However, it is not sufficient to ensure the provision of care: less than half of full-year insured adolescents received a well visit. Efforts are needed to encourage greater use of the well visit. A recent study identified parental perceptions linked to lower receipt of adolescent well visits: beliefs that general check-ups are not necessary if the child is not sick and that families cannot afford check-ups.<sup>25</sup> Unlike the established routine preventive care for young children, and despite the evidence base and professional consensus on the importance of preventive care, the value of the annual well visit for adolescents has not taken hold in the general population. To address parent perceptions, greater efforts are needed to promote the value of well visits and educate families about the provision of no cost-sharing for the well visit; activities could include public health campaigns and patient and family education from clinicians and clinics.

Findings that pre- to post-ACA differences in 8 of the 9 preventive services showed significant increases, most in the 5% to 9% absolute increase range, indicate that clinicians have changed their practices: significantly more adolescents are having physical parameters assessed and are receiving anticipatory guidance, with the highest gains (9%) in the areas of healthy eating and physical activity. These are important increases, given the promising evidence that preventive services in these areas positively influence adolescents' behaviors.<sup>6</sup> Despite these gains, overall rates of services, specifically anticipatory guidance, remain quite low, with only 1 in 3 adolescents/parents receiving guidance about seatbelts, helmets, and secondhand smoke. These low rates highlight the need to improve the capacity of clinical delivery systems to deliver preventive services. Research has identified several barriers to clinicians' delivery of preventive services, including limited knowledge of guidelines, limited time, and clinicians' be-

**Table 2. Rates and Differences in the Receipt of a Past-Year Well Visit Among Adolescents (Ages 10-17 Years): Medical Expenditure Panel Survey for the Pre- (2007-2009) and Post-ACA (2012-2014) Periods**

Variable	Received Well Visit, No. (%)		Change From 2007-2009 to 2012-2014	
	Pre-ACA Period [Reference]	Post-ACA Period	Model 1 <sup>a</sup> : OR (95% CI)	Model 2 <sup>a</sup> : aOR (95% CI)
Total sample	4629 (40.6)	5869 (47.6)	1.3 (1.2-1.5) <sup>b</sup>	1.3 (1.2-1.4) <sup>b</sup>
Race/ethnicity				
White	1884 (44.3)	1790 (50.3)	1.3 (1.1-1.5) <sup>b</sup>	1.3 (1.1-1.5) <sup>b</sup>
Black	1010 (36.6)	1275 (46.1)	1.5 (1.3-1.8) <sup>b</sup>	1.4 (1.2-1.7) <sup>b</sup>
Asian	220 (37.9)	328 (45.6)	1.4 (1.0-2.0)	1.3 (0.9-1.9)
Hispanic	1319 (32.6)	2206 (42.5)	1.5 (1.4-1.7) <sup>b</sup>	1.4 (1.2-1.6) <sup>b</sup>
Income group				
<100% FPL	1076 (32.5)	1762 (42.7)	1.6 (1.3-1.8) <sup>b</sup>	1.5 (1.3-1.8) <sup>b</sup>
100-<200% FPL	1135 (33.8)	1464 (43.2)	1.5 (1.3-1.7) <sup>b</sup>	1.5 (1.3-1.8) <sup>b</sup>
200-<400%	1332 (39.6)	1518 (47.5)	1.4 (1.2-1.6) <sup>b</sup>	1.3 (1.1-1.5) <sup>c</sup>
≥400% FPL	1086 (51.0)	1125 (54.0)	1.1 (1.0-1.3)	1.1 (0.9-1.3)
Insurance status				
Full-year private insured	2062 (46.0)	2147 (51.1)	1.2 (1.1-1.4) <sup>c</sup>	1.2 (1.1-1.4) <sup>c</sup>
Full-year public insured	1560 (38.3)	2717 (48.2)	1.5 (1.3-1.7) <sup>b</sup>	1.5 (1.2-1.7) <sup>b</sup>
Partial-year uninsured	648 (35.3)	646 (40.3)	1.2 (1.0-1.5) <sup>d</sup>	1.2 (0.9-1.5)
Full-year uninsured	216 (21.4)	179 (22.4)	1.1 (0.8-1.5)	1.3 (0.9-1.8)

Abbreviations: ACA, Affordable Care Act; aOR, adjusted odds ratio; FPL, Federal Poverty Level; OR, odds ratio.

<sup>a</sup> Model 1 data are given as OR (95% CI) and include years; model 2 data, aOR (95% CI) and include years, controlling for age, sex, race/ethnicity, insurance status, income, and region.

<sup>b</sup> P < .001.

<sup>c</sup> P < .01.

<sup>d</sup> P < .05.

**Table 3. Rates and Differences in the Receipt of Preventive Services Among Adolescents With Any Past-Year Health Care Visit (Ages 10-17 Years): Medical Expenditure Panel Survey for the Pre- (2007-2009) and Post-ACA (2012-2014) Periods**

Service Received	Received Preventive Service, No. (%)		Change From 2007-09 to 2012-14	
	Pre-ACA Period [Reference]	Post-ACA Period	Model 1 <sup>a</sup> : OR (95% CI)	Model 2 <sup>a</sup> : aOR (95% CI)
Physical parameters measured				
Height	6411 (85.1)	7328 (87.4)	1.2 (1.1-1.4) <sup>b</sup>	1.3 (1.1-1.5) <sup>b</sup>
Weight	6637 (87.7)	7573 (90.1)	1.3 (1.1-1.5) <sup>b</sup>	1.3 (1.1-1.5) <sup>c</sup>
Blood pressure	5542 (75.3)	6587 (81.8)	1.5 (1.3-1.7) <sup>c</sup>	1.5 (1.3-1.7) <sup>c</sup>
All 3 parameters	5240 (71.2)	6262 (78.1)	1.4 (1.3-1.6) <sup>c</sup>	1.4 (1.3-1.6) <sup>c</sup>
Anticipatory guidance given				
Healthy eating	3476 (45.2)	4742 (54.5)	1.5 (1.3-1.6) <sup>c</sup>	1.4 (1.2-1.6) <sup>c</sup>
Physical activity	2773 (36.4)	3871 (45.0)	1.4 (1.3-1.6) <sup>c</sup>	1.4 (1.2-1.6) <sup>c</sup>
Seatbelt use	1866 (26.9)	2419 (32.1)	1.3 (1.1-1.5) <sup>c</sup>	1.2 (1.0-1.4) <sup>d</sup>
Helmet use	1984 (26.8)	2557 (29.6)	1.2 (1.0-1.3) <sup>d</sup>	1.2 (1.0-1.3)
Secondhand smoke	2452 (29.7)	3095 (31.7)	1.1 (1.0-1.2)	1.0 (0.9-1.2)
Dental visit	2966 (37.3)	3919 (42.8)	1.3 (1.1-1.4) <sup>c</sup>	1.1 (1.0-1.3)
All 6 topics addressed	792 (10.1)	1123 (12.0)	1.2 (1.0-1.5) <sup>d</sup>	1.1 (0.9-1.4)
Time alone with clinician at most recent visit <sup>e</sup>	1481 (29.8)	1601 (31.1)	1.1 (0.9-1.2)	1.2 (1.0-1.3) <sup>d</sup>

Abbreviations: ACA, Affordable Care Act; aOR, adjusted odds ratio; OR, odds ratio.

<sup>a</sup> Model 1 data are given as OR (95% CI) and include years; model 2 data, aOR (95% CI) and include years, controlling for age, sex, race/ethnicity, insurance status, income, and region.

<sup>b</sup> P < .01.

<sup>c</sup> P < .001.

<sup>d</sup> P < .05.

<sup>e</sup> Ages 12-17 years.

liefs that they cannot deliver the service or that services are not effective.<sup>23,26-29</sup> Systems-based clinician trainings, with the inclusion of screening tools, have been shown to increase screening rates<sup>1</sup> and may be a promising strategy for improving the content and quality of well visits. The 1% increase in time alone with a clinician, significant only in the adjusted analysis, shows very little improvement in time alone after ACA implementation. We suggest that increased demand on clinicians' time to see greater numbers of adolescents may result in less time to accommodate time alone into clinical practice.

**Limitations**

Several study limitations warrant mention. The MEPS data regarding adolescent health care are based on caregiver report, which may not be a comprehensive evaluation of the adolescent's experience; thus, the present findings may be underes-

timated. The preventive services content areas do not fully reflect the set of services recommended by the American Academy of Pediatrics (*Bright Futures*)<sup>4</sup> and sensitive topics are not assessed. To our knowledge, MEPS is the only national survey that monitors preventive services for adolescents and time alone with a clinician during a health care visit. The time alone measure is limited in that it does not provide detail on length of time spent or substance of content. It serves as a "negative" marker, meaning absence of time alone makes it unlikely that sensitive topics were addressed. Additionally, 2 issues may have resulted in possible underestimation of time alone with a clinician: the time alone query asked only about the last health care visit of an unclear nature. A survey of health care use and quality from the adolescent perspective that covers these areas in more detail would contribute to monitoring efforts for this age group. An additional limitation is that the

assessment of preventive services used in this study is not linked to any particular health care visit, thus, the services reported may be from sources other than the health care visits reported by respondents. We have no conclusive evidence that the changes found from the pre- to post-ACA periods are solely owing to implementation of the ACA.

## Conclusions

Taken together, these findings suggest that while adolescents experienced improvement in receipt of well visits and

preventive services following ACA enactment, rates remain low. Building on these improvements, efforts are needed to address family perceptions of the value of the well visit for this age group and to increase system capacity to provide preventive services in a confidential setting. These are highly challenging efforts given that systems are currently addressing complex changes in the financing and delivery of health care. At the time of this writing, the future of health care provisions related to insurance and preventive care—all aspects of federal health care policy—remain uncertain. Careful consideration of evidence can help shape deliberations on the best use of federal resources to improve health and health care.

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*Study concept and design:* All authors.

*Acquisition, analysis, or interpretation of data:* Adams, Park.

*Drafting of the manuscript:* Adams, Park, Irwin.  
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