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Health Policy Resources Center
Research Brief

Financial Barriers to Dental Care Declining after a Decade of Steady Increase

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Key Messages

- *The percentage of the population indicating cost as a barrier to receiving needed dental care fell from 2010 to 2012, a reversal of the increase that occurred from 2000 through 2010.*
- *Despite the decrease in the percentage of the population indicating cost as a barrier to dental care over the last few years, cost barriers in the dental sector remain high relative to other parts of the healthcare sector.*
- *Low-income, non-elderly adults reported the highest level of cost as a barrier, as well as the biggest increase from 2000 to 2010. This increase could be associated with a corresponding erosion in dental benefits among this age group during the same period.*
- *Possible explanations for the decrease in financial barriers to dental care from 2010 to 2012 include the economic recovery, a flattening of prices of dental services, as well as recent increases in public health insurance coverage.*

Introduction

Studies have reported that dental care utilization declined for adults and increased for children from 2000 to 2010.[1 2 3] In these studies, utilization of dental care was based on whether a person reported a dental visit during the past year. Because oral diseases are common and do not resolve over time in absence of intervention, the lack of dental visits has been considered as an indicator of unmet oral health need.[4] Researchers have also attempted to document the extent of unmet dental care wants or needs.[5] According to the National Access to Care Survey, while the vast majority of population believed that they were receiving the dental care they wanted, a significant segment (8.5 percent) reported that they wanted but could not obtain dental care in 1994. In contrast, only 5.6 percent reported unmet medical or surgical wants. The reasons given by people with unmet dental care

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wants included (1) could not afford care – 52.5%, (2) had no insurance – 15.1%, (3) had difficulty getting to an appointment – 12.7%, (4) had a dentist who did not accept insurance – 3.9% and (5) other reasons – 15.8%. The authors concluded that financial barriers were significant in explaining the prevalence of wanted dental care.

A study of the demand for dental care and financial barriers among adults in California indicated that 20.4 percent of individuals reported being unable to afford needed dental care in 2003.[6] The authors reported that financial barriers to receiving needed dental care were related to lacking dental benefits (private or public), being female, being younger, being a minority (African American, Hispanic, or other), having less education, lower family income, and having poor self-reported health. A study based on the National Health Interview Survey (NHIS) reported that in 2008, among dentate adults aged 18 to 64, 16 percent had an unmet dental need due to cost in the past 12 months.[7] The percentage with unmet dental need varied most by dental insurance status; 6.9 percent of those with comprehensive private dental benefits reported an unmet dental need, whereas 36.8 percent of those without any dental benefits reported an unmet dental need.

In this brief, we look at trends in the percentage of the population reporting unmet dental needs due to cost from 2000 through 2012 and factors that predict unmet need. We discuss how dental prices, the economy, recent national policy changes, trends in private and public dental benefits, and demographic factors affected the level of unmet dental need because of cost.

Data & Methods

To study trends in unmet health care needs, we used 2000-2012 data from the NHIS. The survey, conducted annually, is nationally representative of the civilian noninstitutionalized population. The family core component collects information on every member of a sample household, including information on demographics, health characteristics and insurance coverage. The interviewed sample in 2012 consisted of 42,366 households, which yielded 108,131 persons in 43,345 families.[8] One adult and one child per household were randomly selected for the sample adult and sample child components.

We compared unmet needs due to cost for dental care and three other categories of health care products and services: (1) mental health services, (2) prescription drugs and (3) eyeglasses. We used a chi-square test to test for significant differences over time in the percentage of the population who reported unmet needs due to cost. The dependent variable in the analysis was a binary yes/no variable based on the response to the following question: "During the past 12 months was there ever a time when you needed dental care (including check-ups) and didn't get it because you could not afford it?" We used logistic regression analysis to model the factors that lead to unmet dental need. Odds ratios are calculated to measure the magnitude of different factors on unmet dental need. The control variables used in the analysis were similar to those used in Brown et al. (2009) and included age, race/ethnicity, family income, employment status, marital status, general health status and region.[9] We controlled for year effects by including indicator variables for each year (reference year 2010). SAS Version 9 was used in this analysis.[10] All estimates were weighted and estimates of standard errors account for the complex survey design of the NHIS.

Results

Figure 1 shows the percentage of the population reporting cost as a barrier in obtaining dental care, prescription drugs, mental health services and eyeglasses. From 2000 through 2012, a higher

percentage of survey respondents reported cost as a barrier to care in the dental sector compared to other products and services. The trends over time were similar for all four services/products – a fairly steady increase from 2000 to 2010, followed by a decrease from 2010 to 2012. For example, the percentage indicating cost as a barrier for dental care increased from 8.1 percent in 2000 to 13.5 percent in 2010, followed by a decline to 11.5 percent in 2012. These changes were statistically significant.

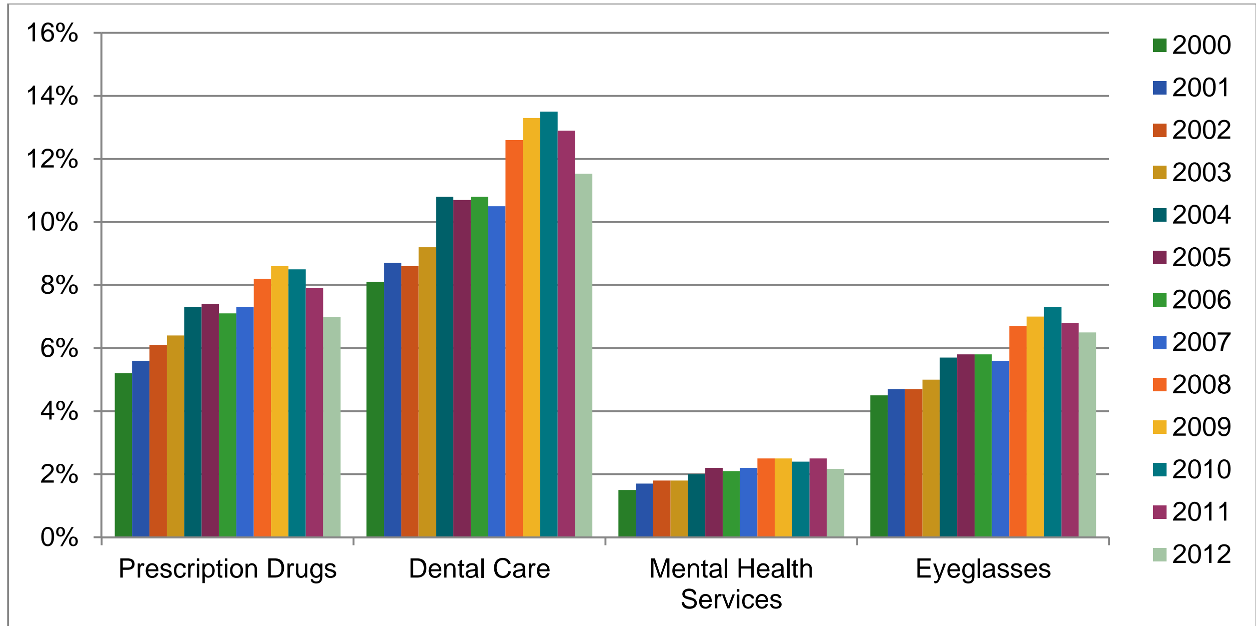
Figure 2 shows trends in the percentage of the population who could not obtain needed dental services due to cost from 2000 to 2012 by age. The highest levels of cost as a barrier were reported by nonelderly adults aged 21 through 64. The largest increases from 2000 to 2010, as well as the largest decreases from 2010 to 2012, can be seen among nonelderly adults. These changes were statistically significant. The lowest levels of cost as a barrier were reported by the elderly. The level of cost as a barrier among this age group increased from 2000 to 2010, followed by a decrease from 2010 to 2012. These changes were statistically significant. Among children aged 2 to 20, the percentage that reported cost as a barrier to dental care was relatively steady from 2000 to 2010, but fell from 2010 to 2012. This decline for children was statistically significant.

Figure 3 shows trends in the percentage of nonelderly adults aged 21 through 64 who indicated cost as a barrier by income level. While financial barriers increased among all income groups from 2000 to 2010, the largest increases were among poor and near-poor adults (<100% FPL, 100-199% FPL and 200-399% FPL). Among all income groups from 2010 to 2012, the percentage of adults with cost barriers fell, with the largest decreases among the poor and near-poor. Changes between 2000 to 2010 and 2010 to 2012 were statistically significant.

Among nonelderly adults (Table 1), after controlling for several economic and demographic variables, we found that 2010 represented the end of a period of steady increases in financial barriers to dental care. Relative to 2010, the odds of an adult reporting cost as a barrier to dental care were 29 percent lower in 2012 (OR=0.814, $p<0.01$). Income and health insurance were strongly associated with cost barriers to dental care. Compared to adults with high incomes (>400% FPL), adults in lower income groups were two to three times more likely to report cost as a barrier to dental care (<100% FPL, OR=2.569, $p<0.01$; 100-199% FPL, OR=2.731, $p<0.01$; 200-399% FPL, OR=2.013, $p<0.01$). Relative to the uninsured, adults with public (OR=0.449, $p<0.01$) or private (OR=0.258, $p<0.01$) health benefits were less likely to report cost as a barrier to dental care. These data do not contain information on dental benefits status, only health benefits in general. Compared to male adults, the odds that female adults report cost as a barrier to dental care were 46% higher (OR=1.462, $p<0.01$).

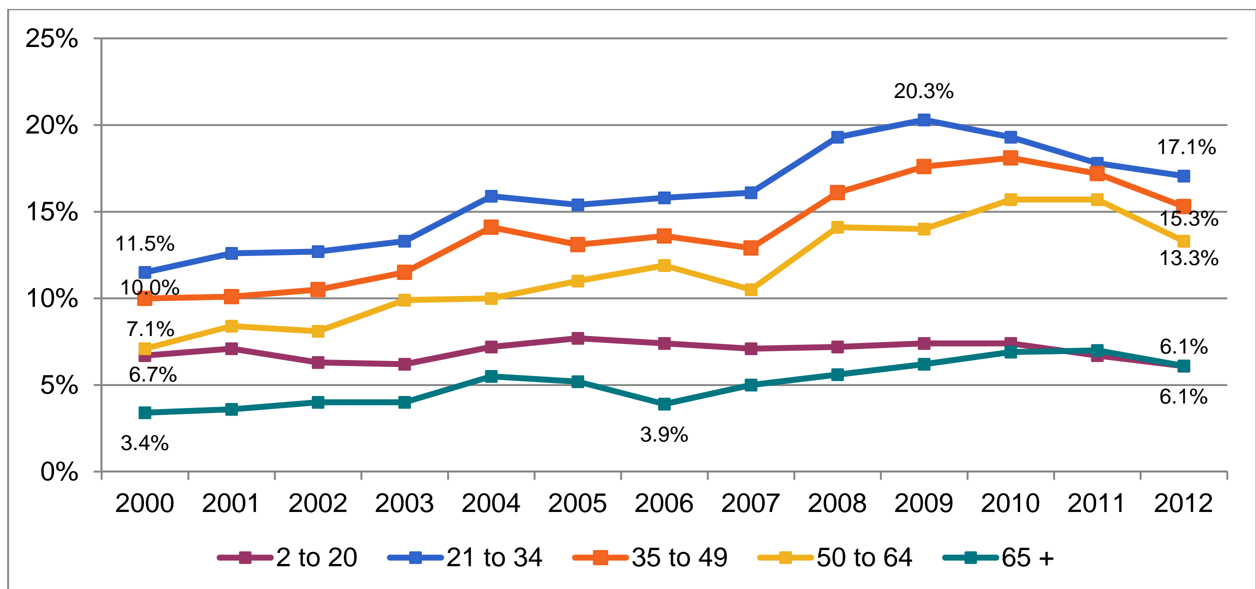
Among children (Table 2), after controlling for various factors, the percentage that reported cost as a barrier to dental care was flat from 2000 through 2010. The odds of a child reporting cost as a barrier to dental care was about 16 percent less in 2012 relative to 2010 (OR=0.839, $p<0.05$). Income and health insurance were strongly related to cost as a barrier, with those in low income groups much more likely than those in the highest income group to report cost as a barrier (<100% FPL, OR=3.912, $p<0.01$; 100-199% FPL, OR=4.225, $p<0.01$; 200-399% FPL, OR=2.832, $p<0.01$). Children with private (OR=0.334, $p<0.01$) or public (OR=0.342, $p<0.01$) health insurance were much less likely to report cost as a barrier than those without insurance. Female children were more likely to report a barrier due to cost than males (OR=1.097, $p<0.01$).

Figure 1: Percentage of the Population Who Needed But Did Not Obtain Select Health Services during the Previous 12 Months Due to Cost as a Barrier



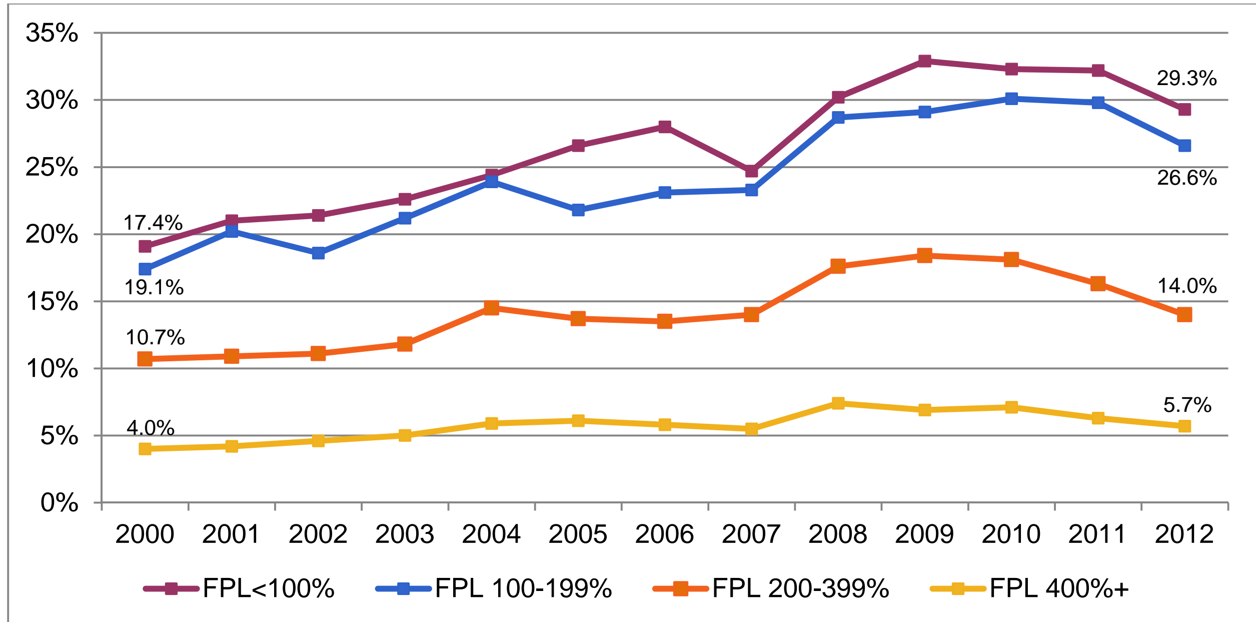
Source: National Health Interview Survey, National Center of Health Statistics. **Notes:** Changes from 2000 to 2010 for Prescription Drugs, Dental Care, Mental Health Services and Eyeglasses are statistically significant at the 1 percent level. Changes from 2010 to 2012 for Prescription Drugs, Dental Care and Eyeglasses are statistically significant at the 1 percent level. Change from 2010 to 2012 for Mental Health Services is significant at the 5% level.

Figure 2: Percentage of the Population Indicating Cost as a Barrier to Receiving Needed Dental Care by Age



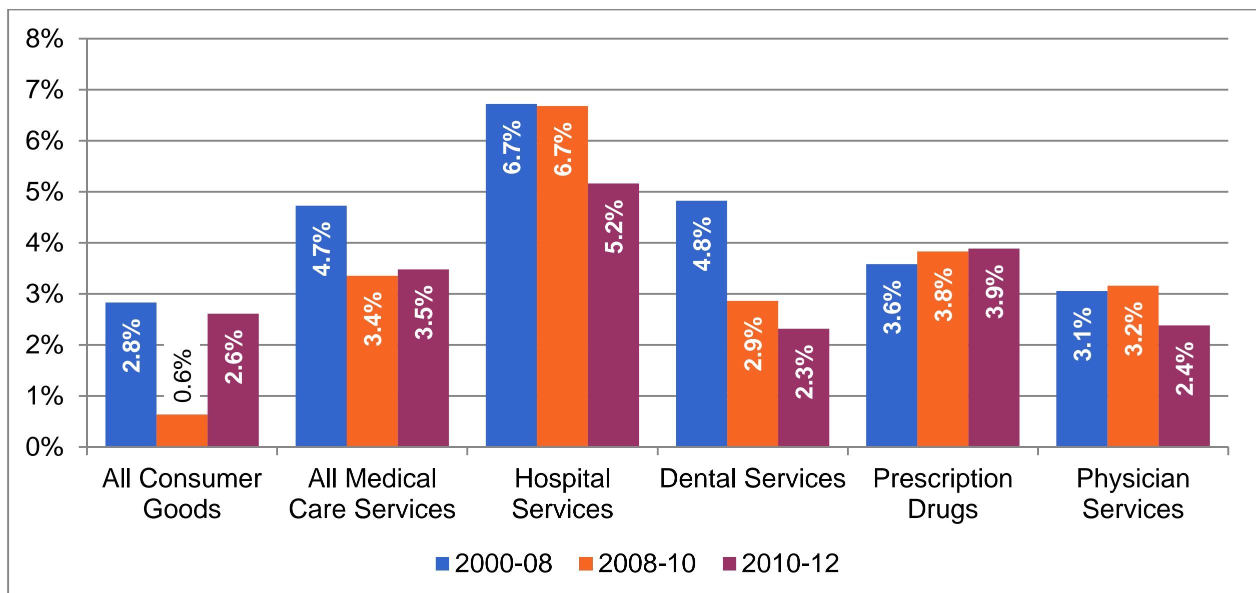
Source: National Health Interview Survey, AHRQ. **Notes:** Changes from 2000 to 2010 for age groups 21 to 34, 35 to 49, 50 to 64 and 65 + are statistically significant at the 1 percent level. Changes from 2010 to 2012 for age groups 2 to 20, 21 to 34, 35 to 49 and 50 to 64 are statistically significant at the 1 percent level. Change from 2010 to 2012 for age group 65+ is significant at the 10% level.

Figure 3: Percentage of the Adults 21 to 64 Indicating Cost as a Barrier to Receiving Needed Dental Care by Income



Source: National Health Interview Survey, AHRQ. **Notes:** Changes from 2000 to 2010 are statistically significant at the 1 percent level for all income groups. Change from 2010 to 2012 is statistically significant at the 1 percent level for the income group 200-399%. Changes from 2010 to 2012 for all other income groups are statistically significant at the 5 percent level. FPL is federal poverty level.

Figure 4: Annual Price Inflation for All Consumer Goods and Select Health Care Services, 2000-2012



Source: Bureau of Labor Statistics. **Notes:** Annual inflation rate is calculated as compound annual growth rate of price index. U.S. city average index used for all categories of consumer goods and health care services.

Table 1: Unable to Obtain Needed Dental Care Due to Cost, Adults 18 to 64

Variables	Odds Ratio	95% Wald Confidence Limits	P-value
Year			
yr2000	0.558	(.518, .601)	<.0001
yr2001	0.607	(.565, .651)	<.0001
yr2002	0.598	(.555, .644)	<.0001
yr2003	0.646	(.601, .695)	<.0001
yr2004	0.777	(.725, .834)	<.0001
yr2005	0.751	(.699, .806)	<.0001
yr2006	0.375	(.337, .418)	<.0001
yr2007	0.736	(.682, .795)	<.0001
yr2008	0.960	(.889, 1.037)	0.3021
yr2009	0.981	(.910, 1.057)	0.6169
yr2010	reference		
yr2011	0.931	(.875, .991)	0.0237
yr2012	0.814	(.764, .868)	<.0001
Age			
21 to 34	reference		
35 to 49	1.120	(1.080, 1.161)	<.0001
50 to 64	0.864	(.832, .898)	<.0001
Gender			
male	reference		
female	1.462	(1.420, 1.506)	<.0001
Race/Ethnicity			
hispanic	0.628	(.599, .658)	<.0001
nhwhite	reference		
nhblack	0.720	(.689, .753)	<.0001
nhother	0.514	(.473, .558)	<.0001
Family Income			
400%+	reference		
200-399%	2.013	(1.927, 2.103)	<.0001
100-199%	2.731	(2.605, 2.864)	<.0001
<100%	2.569	(2.428, 2.718)	<.0001
Employment			
not employed	reference		
employed	1.065	(1.031, 1.101)	0.0002
Health Insurance			
no insurance	reference		
private	0.258	(.249, .267)	<.0001
public	0.449	(.426, .473)	<.0001
Marital Status			
not married	reference		
married	0.813	(.787, .841)	<.0001
General Health Status			
good/fair/poor	reference		
excellent/very good	0.536	(.520, .552)	<.0001
Region			
Northeast	reference		
Midwest	1.098	(1.040, 1.161)	0.0008
South	1.189	(1.130, 1.252)	<.0001
West	1.430	(1.353, 1.512)	<.0001
Number of Observations	**307,277**		

Table 2: Unable to Obtain Needed Care Due to Cost, Children 2 to 17

Variables	Odds Ratio	95% Wald Confidence Limits	P-value
Year			
yr2000	0.895	(.776, 1.034)	0.1324
yr2001	1.029	(.892, 1.187)	0.6917
yr2002	0.887	(.771, 1.021)	0.0957
yr2003	0.844	(.734, .970)	0.0169
yr2004	1.013	(.880, 1.165)	0.8621
yr2005	1.117	(.972, 1.284)	0.1196
yr2006	1.027	(.876, 1.204)	0.7422
yr2007	0.965	(.818, 1.137)	0.6683
yr2008	1.073	(.925, 1.245)	0.3545
yr2009	1.094	(.953, 1.256)	0.2000
yr2010	reference		
yr2011	0.933	(.805, 1.081)	0.3537
yr2012	0.839	(.726, .971)	0.0182
Age			
2 to 6	reference		
7 to 17	2.119	(1.923, 2.203)	<.0001
Gender			
male	reference		
female	1.097	(1.036, 1.156)	0.0012
Race/Ethnicity			
hispanic	0.908	(.840, .981)	0.0150
nhwhite	reference		
nhblack	0.775	(.711, .845)	<.0001
nhother	0.620	(.526, .730)	<.0001
Family Income			
400%+	reference		
200-399%	2.832	(2.549, 3.174)	<.0001
100-199%	4.225	(3.757, 4.751)	<.0001
<100%	3.912	(3.428, 4.464)	<.0001
Health Insurance			
no insurance			
private	0.334	(.306, .364)	<.0001
public	0.342	(.314, .372)	<.0001
General Health Status			
good/fair/poor	reference		
excellent/very good	0.721	(.672, .772)	<.0001
Region			
Northeast	reference		
Midwest	1.272	(1.135, 1.425)	<.0001
South	1.352	(1.224, 1.495)	<.0001
West	1.537	(1.378, 1.715)	<.0001
Number of Observations	**134,934**		

Table 3: Changes in Dental Benefits Provided by State Medicaid Programs since 2002

	States
No Change	AL, AZ, CT, DE, FL, GA, HI, ID, KS, KY, LA, ME, MS, NE, NV, NH, NM, NY, ND, OK, SC, VT, WV, WI
Increased Coverage	AK, AR, CO, DC, IA, NC, OH, OR, RI, TX, VA, WY
Decreased Coverage	CA, IL, IN, MD, MA, MI, MN, MO, MT, NJ, PA, SD, TN, UT, WA

Discussion

According to our analysis, the percentage of the population reporting cost as a barrier to receiving four health services (prescription drug, mental health, dental and eyeglasses) increased from 2000 to 2010, and then declined from 2010 to 2012. The two-percentage point decline reported for dental services corresponds to about six million fewer Americans reporting cost as a barrier to needed dental care in 2012 than in 2010.

There are a host of factors that might explain the decline in cost as a barrier from 2010 through 2012, particularly for nonelderly, working-age adults. Due to limitations in the data set we used, we were not able to include many of these in our model.

One important factor, which we could not capture in our model, was the actual cost of dental care to the consumer. Figure 4 shows annual price inflation for all consumer goods and select health care services for 2000 to 2012 divided into three periods: 2000 to 2008, 2008 to 2010 and 2010 to 2012. From 2010 to 2012, dental care prices, as measured by the dental CPI, not only grew at a lower rate than other health care services, but they also failed to keep up with the rate of general inflation, meaning that they are actually decreasing in real terms. We believe that it is very likely that flattening dental prices played an important role in the decline in the percentage of individuals that reported cost as a barrier to dental care. Other possible explanations for the decline from 2010 through 2012 include the slow, but steady improving labor market. According to the NHIS, the percentage of respondents eighteen years and older who were working at the time they were interviewed rose from 44.95 percent in 2010 to 45.63 percent in 2012. Given that private dental benefits are closely tied with employment, the slowly improving labor market could also have played a role to dampen the percentage of adults that reported a barrier to dental care due to cost.

Some may argue that policy changes at the national level that occurred between 2010 through 2012 played a role to decrease access barriers because of cost. Maintenance of Effort (MOE) provisions enacted under the Affordable Care Act (ACA), which end for adults in 2014 and for children in 2019, helped to preserve ongoing coverage in Medicaid and CHIP.[11] This policy change enacted by the federal government could have helped stabilize the percentage of adults and children with financial barriers to dental care. The ACA also mandates that young adults can stay on their parents' health care plan until age 26. Among young adults, the percentage with no health insurance did in fact decrease from 35.6 percent in the third quarter of 2010 to 27.0 percent in the fourth quarter of 2012.[12] Previous studies have shown that 95 percent of those with private dental benefits receive them through an

employer[13] and the majority of firms that offer health insurance also offer a dental plan.[14] This suggests that there could have been some spillover effects of increased health insurance coverage for young adults due to the ACA. More research is needed to investigate the precise factors that led to the decline in access barriers to dental care because of cost from 2010 through 2012.

There are several factors that explain the increase in financial barriers to dental care for nonelderly adults from 2000 through 2010. Earlier research[15] showed that the percentage of nonelderly adults with private dental benefits fell from 62 percent in 2001 to 56 percent in 2010. We could not control for the change in private dental benefits in our model, but the decline in the receipt of private dental benefits for adults is very likely to have increased cost barriers to dental care over this period. Since 2002, public adult dental benefits through Medicaid have also slowly eroded, which is also likely to have increased cost barriers for adults. According to our analysis, between 2002 and 2012, twenty-four states have had no change in dental benefits provided to adults on Medicaid, twelve states have increased coverage and fifteen states have decreased coverage (Table 3).[16] Over the same period, dental related ER visits – a clear barometer of access to care issues – increased, particularly for young adults.[17] The deterioration in private and public dental benefits coverage for young adults during the 2000s created significant financial barriers to dental care, which led to a substitution of dental ER visits for dental office visits. Given the decline from 2010 to 2012 in the percentage of young adults with access barriers to dental care because of cost, it will be interesting to see if dental ER visits decline for this age group.

Provision of dental insurance and improvement of dental benefits are a means of reducing financial barriers to care.[18 19] Recent research has shown that the expansion of adult dental benefits in Medicaid increases utilization of dental services.[20 21]

The situation for children is very different. Although fewer children had private dental benefits in 2010 (57 percent) compared to 2001 (49 percent), fewer were uninsured for dental care (2001: 20 percent; 2010: 16 percent). This is because more had public dental insurance (2001: 23 percent; 2010: 36 percent).[22] The increase in public dental coverage among low-income children is likely to have greatly contributed to holding down the percentage of children indicating cost as a barrier to dental care from 2000 to 2010. It appears that the public safety net for children was resilient to the external economic environment over this period.

Looking forward, the ACA is likely to have a limited impact on adult dental benefits, although the law does expand benefits for children.[23] Fortunately, states still have the opportunity to expand dental benefits for adults either through Medicaid or their health insurance exchanges policies.[24] Policy initiatives led by the states, such as increases in dental reimbursement,[25] streamlined administrative processes,[26] patient outreach, oral health literacy campaigns, or expansion of Medicaid dental benefits[27 28 29] could further drive down the percentage of adults with cost barriers to dental care. Despite the positive progress since 2010, significant challenges remain in ensuring that all adults, particularly low-income adults, have access to dental benefits and, ultimately, routine dental care that helps them achieve optimal oral health.

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