BRIEF COMMUNICATION

The impact of the affordable care act's Medicaid expansion on dental care use through 2016

Kamyar Nasseh, PhD; Marko Vujicic, PhD

Health Policy Institute, American Dental Association, Chicago, IL, USA

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Correspondence
Kamyar Nasseh, Health Policy Institute, 211 E. Chicago Ave, American Dental Association, Chicago, IL.
Tel.: 312-440-7495; Fax: 312-440-7461;
e-mail: nassehk@ada.org.
Kamyar Nasseh and Marko Vujicic are with the Health Policy Institute, American Dental Association.

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Abstract

Objective: To examine the impact of the Affordable Care Act on dental care use among low-income adults ages 21-64.
Methods: Our analysis uses national survey data from the 2010-2016 Gallup Wellbeing-Index. We use a differences-in-differences analysis to assess changes since the end of 2013 in dental care use among low-income adults. We compare changes in states that expanded Medicaid and offer adult Medicaid dental benefits versus changes in other states.
Results: Relative to the pre-reform period and other states, in Medicaid expansion states with adult dental benefits, dental care use increased 3-6 percentage points in 2016.
Conclusions: In Medicaid expansion states with adult dental benefits, evidence suggests that low-income adults have greater access to dental care.

Introduction

Medicaid expansion under the Affordable Care Act has the potential to increase dental care use among low-income adults, particularly in states that offer dental benefits to Medicaid enrolled adults (1,2). Relative to the pre-reform period and other states, in Medicaid expansion states with adult dental benefits, dental care use among low-income adults increased 2–6 percentage points in the second half of 2014, although most of the changes were not statistically significant (3).

In this brief, we update the work done by Nasseh and Vujicic (3) using data from the 2010–2016 Gallup Wellbeing Index Healthways daily tracking survey. We examine additional years of data to determine whether dental care use among low-income adults in Medicaid expansion states with adult dental benefits increased relative to states that did not expand Medicaid and/or do not have adult Medicaid dental benefits.

Study data and methods

Data source

We use data from the 2010–2016 Gallup-Healthways Wellbeing Index, a nationally representative daily landline and cellphone survey of adults ages eighteen and older that asks questions on health insurance, access to care, dental care use, and health status. A state identifier is included with each survey respondent, which allows us to exploit state variation in adult Medicaid dental policy. The Gallup Wellbeing Index has also been used recently in peer-reviewed research examining the impact of the Affordable Care Act (3-5). Each quarter, Gallup surveys approximately 30,000 adults under age 65 (4). All analyses utilize sampling weights provided by Gallup. These weights account for nonresponse bias. In addition, Gallup weights the data that allow researchers to match respondents to U.S. Census population targets based on age, sex, region,

gender, race/ethnicity, population density, and phone status (cellphone only, landline, or dual user) (6).

Study sample

Our sample includes low-income adults ages 21 through 64 with household income at or below 138 percent of the federal poverty level (FPL) and spans interviews that occurred from January 2, 2010 through December 30, 2016. In our analysis, we only include individuals from states that did not expand Medicaid or change their adult dental benefit policies after 2014. Five states (Alaska, Indiana, Louisiana, Montana, and Pennsylvania) expanded Medicaid after 2014. Missouri and Montana added dental benefits to its adult Medicaid program in 2016 (Table 1). Excluding these states allows us to isolate the impact of Medicaid expansion on dental care use among low-income adults after 2013. As in previous research (4), we designate the fourth quarter of 2013 as a wash-out period and hence exclude respondents from that quarter. After imposing these restrictions, our sample includes 172,900 individuals. For information on how we classify adults into income categories based on percentage of the FPL, please see the Appendix.

Methodology

We use a differences-in-differences analysis to assess changes in dental care use in states that expanded Medicaid and provide adult dental benefits. We measure differences in this group of states relative to three different comparison groups: a) states that did not expand Medicaid and do not provide adult dental benefits, b) states that did not expand Medicaid but do provide adult dental benefits, and c) states that did expand Medicaid but do not provide adult dental benefits (Table 1). We classify states as having an adult dental benefit if their Medicaid program covers at least preventive dental services. According to the American Dental Association, states that have a limited dental benefit provide a mix of services that include diagnostic, preventive, and minor restorative procedures. It includes benefits that have a per-person annual expenditure cap of $1,000 or less. States with extensive benefits provide these mix of services, but have an annual cap over $1,000 (7). Since Gallup asks respondents whether they have seen a dentist the past 12 months, we believe it is appropriate to group these categories of states together.

All changes are measured with respect to the pre-reform period, which spans from the start of 2010 through the third quarter of 2013. We designate the post-reform period from January 2014 through December 2016 and analyze the data at full-year intervals. The dependent variable is a binary indicator determining whether an adult visited a dentist in the past 12 months. Explanatory variables include an indicator variable for employment status, sex, a categorical variable for ethnicity/race (Hispanic, black, white, Asian, or other race)

Table 1 Classification of States by Medicaid Expansion Status and Level of Adult Dental Benefits

Classification	States
States with Adult Dental that Expanded Medicaid (22 States and District of Columbia)	Alaska***, Arkansas, California, Colorado, Connecticut, District of Columbia, Illinois, Indiana***, Iowa, Kentucky, Massachusetts, Michigan, Minnesota, Montana***, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania***, Rhode Island, Vermont, Washington
States with Adult Dental that Did Not Expand Medicaid (8 States)	Missouri**, Nebraska, North Carolina, North Dakota*, South Carolina, South Dakota, Wisconsin, Wyoming
States without Adult Dental that Expanded Medicaid (8 States)	Arizona, Delaware, Hawaii, Louisiana***, Maryland, Nevada, New Hampshire, West Virginia
States without Adult Dental that Did Not Expand Medicaid (12 States)	Alabama, Florida, Georgia, Idaho, Kansas, Maine, Mississippi, Oklahoma, Tennessee, Texas, Utah, Virginia

Notes: ***-States that expanded Medicaid after 2014. Alaska expanded Medicaid on September 1, 2015. Indiana expanded Medicaid on February 1, 2015. Louisiana expanded Medicaid on July 1, 2016. Montana expanded Medicaid on January 1, 2016 and began to offer adult Medicaid dental benefits on July 1, 2016. Pennsylvania expanded Medicaid on January 1, 2015. **-Missouri began to offer dental benefits to adult Medicaid beneficiaries on January 1, 2016, but has not expanded Medicaid. *North Dakota expanded Medicaid to 138 percent of the FPL but did not provide dental benefits to the expansion population.

Sources: (1) Kaiser Family Foundation. Status of State Action on the Medicaid Expansion Decision as of January 2, 2017. Available from: https://kaiserfamilyfoundation.files.wordpress.com/2016/10/current-status-of-the-medicaid-expansion-decisions-healthreform.png. (2) Nasseh K, Vujicic M, Yarbrough C. A ten-year, state-by-state, analysis of Medicaid fee-for-service reimbursement rates for dental care services. Health Policy Institute Research Brief. American Dental Association. October 2014. Available from: http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1014_3.ashx. (3) Sanford Health Plan. FAQs on North Dakota's Medicaid expansion. Available from: https://und.edu/health-wellness/student-health/_files/docs/sanford-health-plan-faq-medcaid-expansion.pdf. (4) Medicaid and CHIP Payment and Access Commission [MACPAC]. Medicaid Coverage of Dental Benefits for Adults. June 2015. Available from: https://www.macpac.gov/wp-content/uploads/2015/06/Medicaid-Coverage-of-Dental-Benefits-for-Adults.pdf. (5) Missouri Department of Social Services. May 2016. Missouri Receives Federal Approval to Expand Medicaid Dental Services to Eligible Adults. Available from: http://www.dss.mo.gov/press/160510-approval-expand-medicaid-dental-services.htm. (6) Montana DPHHS. 2016. Dental. Available from: https://dphhs.mt.gov/MontanaHealthcarePrograms/Dental.aspx.

and age. For more details, please see the Appendix. As a robustness check, we also exclude respondents ages 21–25. Dental care use among young adults could be impacted by the Affordable Care Act's dependent coverage policy (8). In a separate sensitivity analysis, we exclude states that expanded states before 2014. These states include California, Connecticut, Minnesota, Washington, and the District of Columbia (9).

Limitations

We cannot determine whether a respondent visited a dentist in the past 3 months, 6 months, or 18 months. This limits our ability to determine whether a dental visit occurred after an individual became eligible for Medicaid as a result of the Affordable Care Act. Because of the 12-month look-back period, any effects of Medicaid coverage on dental care use could be understated.

Results

Summary statistics for our sample are shown in Table A1. As shown in Table 2, pre-reform, 48.5 percent of low-income adults had a dental visit in the past year in Medicaid expansion states that provide adult dental benefits. In non-expansion states without adult dental benefits, 39.7 percent of low-income adults had a dental visit in the past year. Post-reform, dental care use in expansion states with adult dental benefits increased to 49.6 percent in 2014, 50.0 percent in 2015, and 49.8 percent in 2016. In non-expansion states without adult dental benefits, dental care use held steady in 2014 (40.3 percent), but declined to 38.3 percent in 2015 and 38.1 percent in 2016. Relative to the pre-reform period and this first comparison group of states, dental care use among low-income adults in expansion states with adult dental benefits increased by 2.8 percentage points in 2015 and 2016.

Dental care use among low-income adults in non-expansion states with adult dental benefits, declined from 45.9 percent in the pre-reform period to 42.8 percent in 2014, 44.4 percent in 2015 and 40.3 percent in 2016. Relative to the pre-reform period and this second comparison group, dental care use in expansion states with adult dental benefits increased by 3.7 percentage points in 2014, 2.6 percentage points in 2015, and 6.4 percentage points in 2016.

In the third comparison group, expansion states with no adult dental benefits, 42.6 percent of low-income adults had a dental visit pre-reform. Post-reform, dental care use held steady in 2014 (42.6 percent), increased slightly to 43.8 percent in 2015, but declined to 37.8 percent in 2016. Relative to the pre-reform period and this third comparison group, dental care use in expansion states with adult dental benefits increased by 5.8 percentage points in 2016. Dental care use did not increase by a statistically significant margin in 2014 or 2015.

When we excluded ages 21–25 (Supporting Information Table A2) or early expansion states (Supporting Information Table A3) from the analysis, our policy estimates did not

Table 2 Dental Care Use Among Adults with Income Less than or Equal to 138 Percent of the Federal Poverty Level. Pre- and Post-Affordable Care Act Reform

Classification	Pre-ACA reform Q1–2010 to Q3–2013	Post-ACA reform 2014	2015	2016
Adult Medicaid Dental and Expansion of Medicaid	48.5%	49.6%	50.0%	49.8%
Comparison Group #1				
No Adult Medicaid Dental and No Expansion of Medicaid	39.7%	40.3%	38.3%	38.1%
Adjusted Difference-in-Difference Estimates	–	0.31 (–1.1, 1.7)	2.8 (0.02, 5.6)	2.8 (0.11, 5.4)
(In Percentage Points)		[0.649]	[0.049]	[0.042]
Comparison Group #2				
Adult Medicaid Dental and No Expansion of Medicaid	45.9%	42.8%	44.4%	40.3%
Adjusted Difference-in-Difference Estimates	–	3.7 (1.0, 6.5)	2.6 (0.8, 4.4)	6.4 (4.0, 8.7)
(In Percentage Points)		[0.008]	[0.007]	[0.000]
Comparison Group #3				
No Adult Medicaid Dental but Expansion of Medicaid	42.6%	42.6%	43.8%	37.8%
Adjusted Difference-in-Difference Estimates	–	1.0 (–1.6,3.5)	0.01 (–4.3, 4.4)	5.8 (2.5, 9.1)
(In Percentage Points)		[0.447]	[0.995]	[0.001]

Notes: Adjusted differences-in-differences estimates derived from regression that controls for age, sex, employment status, and race/ethnicity. Regression includes state fixed-effects and a linear quarterly time trend. Calculated standard errors from regression clustered by state. 95% confidence intervals in parentheses. *P*-values in brackets. All estimates are weighted using Gallup sampling weights. State Medicaid expansion status and adult Medicaid dental benefit levels determined as of 2014. AK, IN, LA, MO, MT, and PA changed Medicaid expansion polices and/or adult benefit levels since 2014 and are hence excluded from the analysis. Records from the fourth quarter of 2013 are excluded from the analysis as a wash-out period. Number of Observations: 172,900.

Source: 2010–2016 Gallup-Healthways Wellbeing Index Survey.

appreciably change. Relative to the pre-reform period and this non-expansion states without dental benefits, dental care use among low-income adults in expansion states with adult dental benefits increased by 2.5 percentage points in 2015 (P-value = 0.112) and 1.5 percentage points in 2016 (P-value = 0.209) (Supporting Information Table A3).

Discussion

As in Nasseh and Vujicic (3), we measured changes in dental care use among low-income adults in Medicaid expansion states with adult dental benefits relative to states that did not expand Medicaid and/or do not have adult dental benefits in Medicaid. Unlike Nasseh and Vujicic (3), our updated analysis finds a statistically significant association between Medicaid expansion and dental care use among low-income adults. When measured against changes in dental care use in the three comparison groups, dental care use in expansion states with adult dental benefits increased by 3–6 percentage points by 2016. Most of these changes were statistically significant.

There are several reasons why the impact of Medicaid expansion in states with adult Medicaid dental benefits has increased over time. Newly insured low-income adults may not have been aware of dental benefits within their state Medicaid program (10). Additional patients with dental care needs may have become more aware over time of where they can access dental care, including dental offices participating in Medicaid and Federally Qualified Health Centers. Interestingly, dental care use declined from the end of 2013 through 2016 in states that do not have adult dental benefits and/or did not expand Medicaid. In Medicaid expansion states without adult dental benefits, dental care use declined from 42.6 in the pre-reform period to 37.8 percent in 2016. Patients with dental care needs that entered the healthcare system since 2014 may have not been able to find settings that provide dental care at little or no cost. There may not have been capacity within the dental care safety net to treat additional patients. We also found that in non-expansion states that provide adult dental benefits, dental care use declined from 45.9 percent in the pre-reform period to 40.3 percent in 2016. This too is unexpected and could also reflect dental safety net capacity issues or the challenges patients having finding providers and, in general, navigating the system (11). The decline in dental care use in these states could also simply reflect long-term underlying trends in dental care use among adults in the United States (12).

Current proposals in Congress advocate that states phase out the Medicaid expansion within 3–6 years. The Congressional Budget Office estimates that 15 million could lose Medicaid coverage by 2026. Most of this decline will be in Medicaid expansion states (13). It is not clear at this point if low-income adults that have gained dental benefits from Medicaid expansion will be able to maintain dental benefits in the private insurance marketplace.

Disclosure

The authors are employees of the American Dental Association Health Policy Institute. However, the views expressed by the authors do not necessarily reflect those of the American Dental Association.

References

1. Chazin S, Guerra V, McMahon S. Strategies to improve dental benefits for the Medicaid expansion population [Internet]. *Center for Health Care Strategies* 2015 Feb [cited 2017 Jul 17]. Available from: http://www.chcs.org/media/CHCS-Revised-Adult-Dental-Benefits-Brief021214.pdf
2. Center for Health Care Strategies. Medicaid adult dental benefits: an overview. 2017 May [cited 2017 Jul 17]. Available from: http://www.chcs.org/media/Adult-Oral-Health-Fact-Sheet_051617.pdf
3. Nasseh K, Vujicic M. Early impact of the Affordable Care Act's Medicaid expansion on dental care use. *Health Serv Res.* Forthcoming 2016.
4. Sommers BD, Musco T, Finegold K, Gunja MZ, Burke A, McDowell AM. Health reform and changes in health insurance coverage in 2014. *N Engl J Med.* 2014;**371**(9):867-74.
5. Sommers BD, Gunja MZ, Finegold K, Musco T. Changes in self-reported insurance coverage, access to care, and health under the Affordable Care Act. *JAMA.* 2015;**314**(4):366-74.
6. Gallup. How does the Gallup-Sharecare well-being index work? [Internet]. *Gallup.* 2017 Apr [cited 2017 Sep 22]. Available from: http://www.gallup.com/209189/gallup-sharecare-index-work.aspx
7. Nasseh K, Vujicic M, O'dell A. Affordable Care Act expands dental benefits for children but does not address critical access to dental care issues. *Health Policy Institute Research Brief. Am Dent Assoc.* 2013 Apr [cited 2015 Jun 26]. Available from: http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0413_3.ashx
8. Vujicic M, Yarbrough C, Nasseh K. The effect of the Affordable Care Act's expanded coverage policy on access to dental care. *Med Care.* 2014;**52**(8):715-9.
9. Sommers BD, Kenney GM, Epstein AM. New evidence on the Affordable Care Act: coverage impacts of early Medicaid expansions. *Health Aff (Millwood).* 2014;**33**(1):78-87.
10. Askelson NM, Wright B, Bentler S, Momany ET, Damiano P. Iowa's Medicaid expansion promoted healthy behaviors but

was challenging to implement and attracted few participants. *Health Aff (Millwood)*. 2017;**36**(5):799-807.
11. Health Policy Institute. Oral health and well-being in the United States [Internet]. *Am Dent Association* 2016; [cited 2017 Jul 17]. Available from: http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Oral-HealthWell-Being-StateFacts/US-Oral-Health-Well-Being.pdf?la=en.
12. Nasseh K, Vujicic M. Dental care utilization steady among working-age adults and children, up slightly among the elderly. *Health Policy Institute Research Brief. American Dental Assoc.* 2016 Oct [cited 2017 Oct 3]. Available from: http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_1016_1.pdf
13. Congressional Budget Office Cost Estimate. H.R. 1628 better care reconciliation act of 2017 [Internet]. *Congressional Budget Office* 2017 Jun [cited 2017 Jul 17]. Available from: https://www.cbo.gov/system/files/115th-congress-2017-2018/costestimate/52849-hr1628senate.pdf

SUPPORTING INFORMATION

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