MCBS
Medicare Current Beneficiary Survey

CMS
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Dental Services Among Medicare Beneficiaries: Source of Payment and Out-of-Pocket Spending

Introduction

Oral health is an important aspect of general health and wellbeing. Poor oral health is linked with respiratory disease, cardiovascular disease, and diabetes.[1] The relationship between poor dental health and disease is especially relevant for vulnerable populations, such as individuals with disabilities or the elderly.[2, 3, 4]

Although Medicare does cover dental services that are an essential part of a medical procedure such as jaw surgery, routine dental services, including exams, check-ups, and cleanings, are not covered by Medicare. Beneficiaries must pay for these routine services directly out-of-pocket (OOP), or rely on dental coverage through private plans or Medicaid. This lack of dental coverage can be a barrier to seeking dental care for beneficiaries. More than half of all beneficiaries do not use any dental services in a given year.[5]

This data highlight examines sources of payment and OOP spending for dental services among Medicare beneficiaries for two time periods, 2002 and 2012, and by select beneficiary characteristics. The analysis uses the Medicare Current Beneficiary Survey (MCBS) which has been widely used to study total Medicare costs and health care utilization, but comparatively little research has been done on the dental information collected in the survey. The MCBS collects detailed self-reported information on different sources of payment for a dental event.

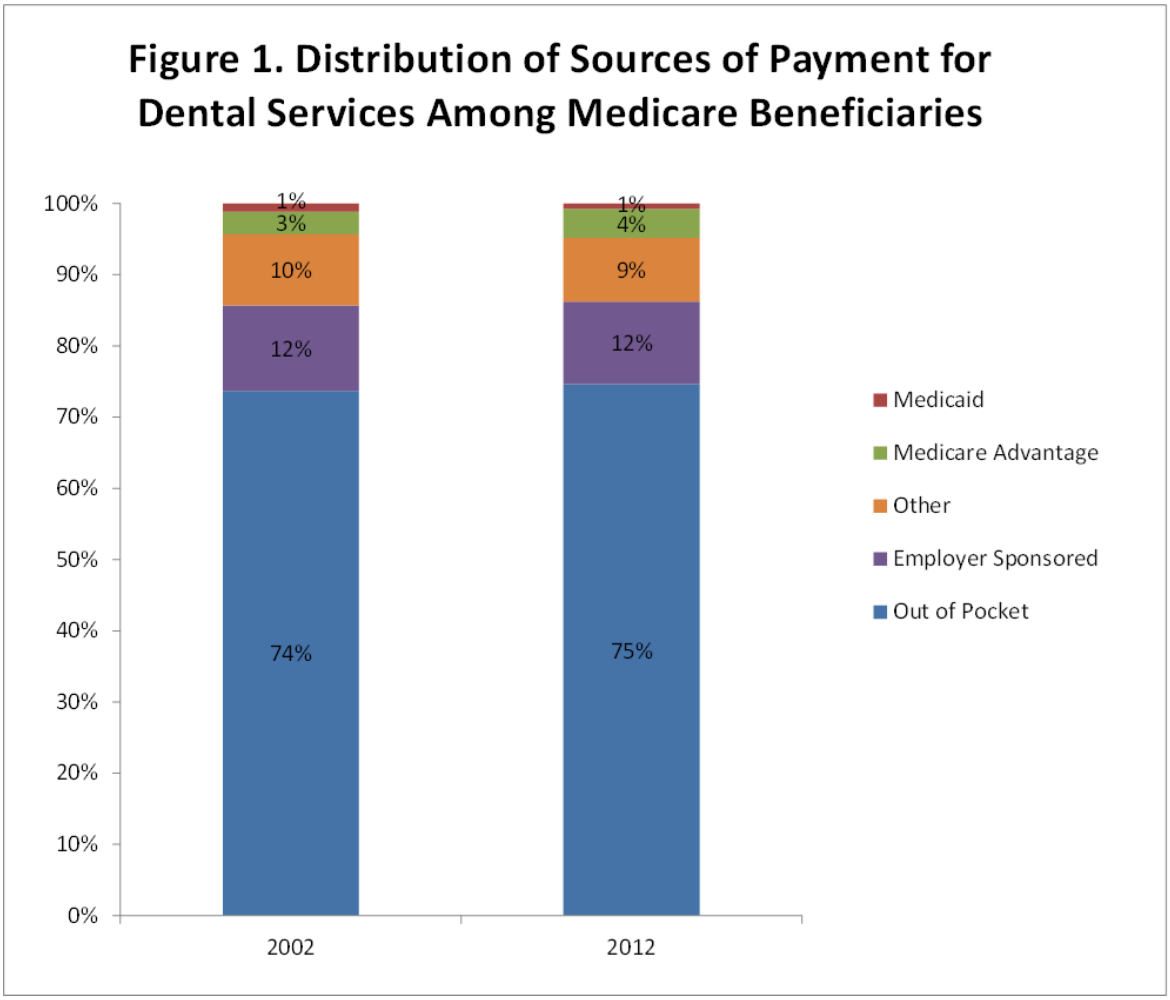
KEY FINDINGS

- Medicare beneficiaries paid out-of-pocket nearly three-fourths of the costs of dental services.
- The percentage of out-of-pocket spending on dental services by all Medicare beneficiaries did not change in 2012 compared to 2002.
- Beneficiaires without supplemental insurance paid a higher proportion of dental costs in 2012 compared to 2002.

Source of Payment for Dental Services and Average Dental Costs over Time

Figure 1 illustrates sources of payment for dental services in 2002 and 2012 among Medicare beneficiaries with at least one reported dental service. The majority of dental costs were covered directly by beneficiary OOP spending, at about 75%. Employer sponsored insurance was the next largest payer, at 12%. Other payers[1] combined paid about 10% of dental costs.

[1] The other payer category was determined by combining some of the smallest sources of payment, which included Medicare Fee-for-Service. A complete description of other payers can be found in the technical notes.



Medicare Advantage covered less than 5% of dental costs, and Medicaid paid less than 1%.

Across sources of payment, the percentage of costs covered by payers did not change between 2002 and 2012. Average dental costs per beneficiary increased significantly from $798 in 2002 to $929 in 2012[2].

Total Dental Costs and Medicare Beneficiary Out-of-Pocket Spending

Although the percentage of beneficiary OOP spending for dental services did not significantly vary over time (~75%) in the Medicare population, we also examined total dental costs and OOP spending by key beneficiary characteristics for 2002 and 2012. From 2002 to 2012 there were no trends in the percentage of OOP spending on dental services over time for any of the examined age groups, by gender, or by education status. However, OOP spending on dental services did differ between 2002 and 2012 by supplemental insurance categories (Table 1).

Beneficiaries with no supplemental insurance (Fee-for-Service (FFS) only) directly paid a significantly higher portion of dental costs in 2012 (96.3%) than in 2002 (80.8%). Similarly, beneficiaries with only Medicaid supplemental insurance (that is, FFS and Medicaid) paid 55.3% OOP in 2002, which increased to 75.0% in 2012. Beneficiaries with only private health insurance and FFS saw no change over the selected years, while those with Medicare Advantage or another managed care plan paid 70.3% OOP in 2002, increasing to 81.3% in 2012. However, beneficiaries with multiple supplemental insurance experienced no change in the percentage of OOP spending.

[2] For more detailed numbers, including standard errors, please reference Tables 1 and 2 in the Appendix.

Table 1. Mean Total Dental Costs and Out-of-Pocket Spending with Standard Errors for Medicare Beneficiaries With At Least One Dental Service by Year and Beneficiary Characteristics, in 2012 Dollars

	2002				2012			
	n	Mean Total Dental Costs (SE)	Mean OOP Dental Spending (SE)	Percent of OOP Spending (SE)	n	Mean Total Dental Costs (SE)	Mean OOP Dental Spending (SE)	Percent of OOP Spending (SE)
Age								
64 years old or younger	661	$717 (62)	$409 (46)	57.1% (3.86)	662	$821 (82)	$535 (68)	65.1% (4.06)
65 to 84 years old	3,757	$816 (25)	$613 (21)	75.1% (1.09)	3,614	$940 (32)	$707 (30)	75.2% (1.09)
85 years old or older	538	$730 (58)	$583 (49)	79.8% (2.29)	666	$980 (110)	$782 (106)	79.8% (2.62)
Sex								
Male	2,227	$812 (32)	$588 (28)	72.4% (1.71)	2,197	$987 (42)	$744 (43)	75.3% (1.62)
Female	2,729	$787 (33)	$587 (27)	74.6% (1.26)	2,745	$883 (34)	$652 (38)	73.9% (1.35)
Education								
Less than HS	930	$714 (50)	$509 (40)	71.4% (2.57)	586	$873 (92)	$675 (94)	77.4% (3.53)
High School	1,466	$734 (41)	$556 (32)	75.8% (1.86)	1,298	$727 (43)	$554 (40)	76.2% (2.06)
Any College	2,545	$863 (35)	$631 (29)	73.2% (1.49)	3,039	$1,016 (40)	$749 (37)	73.8% (1.29)
Supplemental Insurance								
No Supplemental	278	$697 (83)	$563 (73)	80.8% (3.73)	208	$1,219 (199)	$1,174 (195)	96.3% (2.40)
Medicaid Only	383	$496 (59)	$275 (32)	55.3% (5.79)	344	$579 (70)	$434 (69)	75.0% (4.57)
Private Insurance only	2,984	$813 (29)	$635 (26)	78.1% (1.12)	1,937	$995 (40)	$754 (37)	75.8% (1.35)
HMO only	657	$809 (59)	$569 (47)	70.3% (2.58)	1,156	$814 (57)	$661 (55)	81.3% (1.95)
Multiple Supplemental	654	$897 (57)	$543 (40)	60.6% (2.59)	1,297	$957 (73)	$600 (62)	62.7% (2.50)

Conclusion

On average, Medicare beneficiaries cover nearly three-fourths of the costs of dental services. While inflation-adjusted dental costs increased from 2002 to 2012, the percentage of OOP spending on dental services by Medicare beneficiaries remained the same and this persisted when examining key socio-demographic characteristics, such as age, gender, and education.

However, beneficiaries without supplemental insurance paid a higher portion of dental costs in 2012, compared to 2002. Similar trends were found for beneficiaries with Medicaid or managed care supplemental insurance. Beneficiaries with private health insurance coverage or multiple supplemental insurance plans saw no increase in their percentage of OOP spending. Furthermore, beneficiaries with multiple supplemental insurance paid the smallest percent of total costs OOP.

These findings highlight an important issue for Medicare beneficiaries, particularly that beneficiaries pay the majority of routine dental costs OOP, and most beneficiaries do not have private or public plans to help offset this cost. This has been consistent over time, and may serve as a deterrent to dental care. Future research should further examine the effects of supplemental insurance, the burden of OOP spending in relation to income, the association between insurance coverage and service utilization, and the relationship between oral health and quality of life. The MCBS is uniquely suited to examine many of these issues.

References

(1) Institute of Medicine and National Research Council. Improving access to oral health care for vulnerable and underserved populations. Washington, DC: National Academies Press, 2011.

(2) Griffin SO, Jones JA, Brunson D, Griffin PM, and Bailey WD. "Burden of oral disease among older adults and implications for public health priorities." American Journal of Public Health. 2012; 102(3), 411-418.

(3) U.S. Department of Health and Human Services*. Oral health in America: a report of the Surgeon General.* Rockville, MD: U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000.

(4) Dolan TA and Atchison KA. "Implications of access, utilization and need for oral health care by the non-institutionalized and institutionalized elderly on the dental delivery system." Journal of Dental Education. 1993; 57(12), 876-887.

(5) Huang J, Saulsberry L, Damico A, Licata R, Neuman T. *Oral Health and Medicare Beneficiaries: Coverage, Out-of-Pocket Spending, and Unmet Need*. Washington, DC: Kaiser Family Foundation. June 2012. Available at <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/8325.pdf>.

This data brief was written by Jessie Parker at CMS, in partnership with Matthew DiFiore, Sukanya Kadam, Robert Kosarowich, and Ida Chiang at Carnegie Mellon University (CMU), under the direction of CMU's Dr. Martin Gaynor. Lisa Mirel and Kim Lochner at CMS provided invaluable editorial feedback. For more information about the MCBS, visit www.cms.gov. To purchase MCBS files, contact the Research Data Assistance Center (ResDAC) at www.resdac.org or (888) 973-7322.

Technical Notes

The Medicare Current Beneficiary Survey (MCBS) collects data from the total Medicare population, whether aged or disabled, living in the community or a facility, or served by managed care or traditional Fee-for-Service (FFS). The MCBS is an in-person, longitudinal panel survey. Respondents are interviewed three times a year over a period of four years to form a continuous profile of their health care experience. Two types of interviews are conducted in the MCBS: a community interview done in the home, and an interview of knowledgeable staff on behalf of beneficiaries in a facility setting.

This data highlight is based upon the 2002 and 2012 MCBS *Cost and Use (CAU)* research files, which represent a full year of data captured in the Winter, Fall and Summer interviews. The *CAU* research files include demographic and health insurance data as well as information on health care utilization and costs, regardless of payer. In addition, the *CAU* files are enhanced with available CMS administrative data and Medicare claims data for survey participants who received services through traditional FFS Medicare. Special steps are taken to expand sample coverage in the CAU files to include all beneficiaries who were enrolled during the calendar year. This mix of continuing enrollees, accretions (i.e., new enrollees), and terminations is referred to as the "ever-enrolled" population. The ever-enrolled population includes everyone who was enrolled in Medicare for any period during the year. These steps are necessary because official Medicare program statistics cover all persons entitled to Medicare during the year, and omitting part-year enrollees and persons who died during the year could substantially bias the results of these analyses. In 2002, 12,697 sampled beneficiaries represented an ever-enrolled population of 41,808,000. In 2012, 11,299 sampled beneficiaries represented an ever-enrolled population of 52,079,000.

Beneficiaries who reported that they received dental care (or service) from a dentist, dental surgeon, endodontist, periodontist, or dental hygienist were subsequently asked about costs for that care and the sources of payments to cover the costs. Any beneficiary from the 2002 and 2012 MCBS CAU file that reported a dental service and the associated cost was included in this analysis. For this analysis source of payments include Medicare Advantage, Medicaid, OOP, employer-sponsored insurance, other payer. To create the 'other' category for source of payment in this analysis, the existing 'other' category was combined with Medicare FFS ("Original Medicare"), Veteran's Administration, individually-purchased insurance, unknown private insurance, private HMO, and uncollected liability.

In this data highlight, cost and source of payment information is from the service summary dataset (RIC SS). This dataset summarizes cost and utilization by event type for all beneficiaries (e.g. there is a one record per beneficiary for all the dental utilization for the year).

Subgroup analyses included age, sex, education and supplemental insurance. Age categories were defined using the sampling age strata variable (D_STRAT) from the Record Identification Code (RIC) 1 and were grouped as: (1) disabled beneficiaries, who were under age 65 and were entitled to Medicare benefits by either receiving two years of Social Security or Railroad Retirement Board benefits, or who had a qualifying disability; (2) beneficiaries ages 65 to 84, who were enrolled in Medicare, regardless of their original reason for Medicare enrollment; and (3) beneficiaries ages 85 and older, who were enrolled in Medicare, regardless of their original reason for Medicare enrollment. Sex was determined using data from the administrative records in the data file RIC A (variable name H_SEX). Education was categorized based on the self-reported education level found in RIC 1 (variable name SPDEGRCV). Supplemental insurance categories were defined using both self-reported and administrative data on insurance status based on the annual summary variables for Medicaid (D_CAID), Private Health Insurance (D_PHI), Private Managed Care (D_PMC) and Medicare Advantage (D_MA) found in RIC 4. For 2002, the annual summary variable for Health Maintenance Organization (D_HMO) was used to instead of D_PMC and D_MA

since earlier years of data on Medicare Advantage and Private Managed Care were not available. Beneficiaries with Medicare Advantage (MA) without other supplemental insurance were categorized as "HMO only" for all years. Beneficiaries with FFS without other supplemental insurance were categorized as "No Supplemental." Beneficiaries with FFS and supplemental private health insurance (PHI) were categorized as "PHI only" but beneficiaries with MA and PHI were categorized as "Multiple Supplemental."

All costs are presented in 2012 dollars and are adjusted for inflation using the Consumer Price Index available at http://www.bls.gov/cpi/home.htm

The CAU files contain cross-sectional weights that represent the "ever-enrolled" Medicare population. The survey weights incorporate the selection probability of each sample person, are post-stratified to control totals based on when beneficiaries became eligible for Medicare, age, sex, race, region, and metropolitan area status and are adjusted to account for non-response. Unweighted sample sizes (n's) are displayed, but all estimates presented in this data highlight were calculated using the cross-sectional weights, and all variance estimates were calculated using the balanced repeated replicate weights with the Fay adjustment. A two-sided p-value of less than 0.05 was used to assess statistically significant differences between estimates. No adjustments were made for multiple comparisons.

Appendix Tables

Appendix Table 1. (Figure 1) Distribution of Sources of Payment for Dental Services Among Medicare Beneficiaries, with Standard Errors

	2002		2012	
	Estimate	SE	Estimate	SE
Sources of Payment				
Out of Pocket	73.59%	1.11	74.57%	1.08
Employer Sponsored	11.98%	0.66	11.57%	0.75
Other	9.96%	0.73	8.98%	0.58
Medicare Advantage	3.17%	0.49	4.07%	0.47
Medicaid	1.16%	0.23	0.72%	0.15

Appendix Table 2. Average Total Cost for Dental Services Among Medicare Beneficiaries, with Standard Errors

	Estimate	SE
Year		
2002	$798.14	22.39
2012	$928.76	31.14