Per-patient Dental Expenditure Rising, Driven by Baby Boomers

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Key Messages

- From 2000 to 2010, inflation-adjusted per-patient dental expenditure was flat among children but increased among adults, especially among the elderly and higher income adults.
- In 2010, per-patient dental expenditures were higher among the elderly than among those in younger age cohorts, and the highest level of expenditures was among the upper-income elderly.
- Due to the aging of the baby boomers, the percent of the population over the age of 65 will grow and dental expenditures among this segment of the population could buoy up the dental economy for years to come.

Introduction

After decades of growth, inflation-adjusted per-capita dental spending has remained flat since 2008, and has not rebounded since the end of the recession in June 2009. The effect of the recession on the health care sector has persisted, and this is typical following economic downturns according to the authors of a recent analysis of Centers for Medicare & Medicaid Services (CMS) national health expenditure data.2

However, in the case of dental services, spending began slowing well before the recent economic slowdown. The flat spending since 2008 contrasts with a 3.9 percent annual growth in real per-capita dental expenditures from 1990 through 2002 and the somewhat slower 1.8 percent annual growth from 2002 to 2008.1 The real net income of dentists also has declined sharply in recent years and the decline started well before the recent economic downturn.3–4 Many factors contributed to the decline in net income, a very important one being a steady decrease in the utilization of dental care among the population. This decrease in utilization, measured as the proportion of the population with a dental visit
during the past 12 months, began in the early 2000s, well before the recession. The decrease turned out to be driven entirely by a decline among adults; the percent with a dental visit among U.S. children has steadily increased since 2000.

In a discussion of dental expenditures, there is one segment of the adult U.S. population that merits special attention. The baby boom generation, as defined by the U.S. Census Bureau, is comprised of Americans born during the 18 years following World War II between 1946 and 1964. In 2011, there were approximately 78 million baby boomers, about one in four Americans. Also of note – the oldest of the baby boomers turned 65 in 2011.

A recent NCHS data brief confirms that the prevalence of edentulism among seniors continues to fall. Older Americans are retaining their teeth more than ever before and hence remain subject to oral diseases and disorders. In general, retired boomers will require more dental services than previous senior cohorts and purchase more intensive services than younger patients. However, many may lack the means to fully finance their dental care.

This research brief focuses on recent trends in real (i.e., inflation-adjusted) per-patient dental expenditures. We examine recent trends in average real per-patient dental expenditure and differences by age and income level. We also discuss the policy implications of trends in dental expenditures among baby-boomer Americans in the context of the expected growth in this segment of the population.

**Data & Methods**

We analyzed data from the Medical Expenditure Panel Survey (MEPS) that is managed by the Agency for Healthcare Research and Quality (AHRQ). We focused on the period 2000 to 2010, the most recent year for which data are available (data for 2010 was released in October 2012).

Our sample includes those who visited a dentist during the year. For example, we computed average dental expenditures in 2010 among those with at least one dental visit during 2010. This includes expenditures on dental services provided by all dentists including general practice dentists, orthodontists and other dental specialists. Annual per-patient dental expenditure estimates are based on all sources of payment including private and public dental benefits, as well as out-of-pocket payments. Public dental benefits include Medicaid and CHIP (Children’s Health Insurance Program).

To examine differences among income groups, we categorized individuals into two income categories, less than 200% of the Federal Poverty Level (FPL) and 200% of the FPL and higher.

As recommended by AHRQ we used the Gross Domestic Product (GDP) deflator to adjust for inflation and all expenditures estimates are expressed in terms of constant 2010 dollars.

We compare results for different types of dental benefit status. Respondents were considered to have private dental insurance if they reported private dental insurance at any time during the year. Respondents were considered to be covered by Medicaid/CHIP if they were covered by Medicaid/CHIP during any time during the year and not covered by private dental insurance. Those who reported neither private dental insurance nor Medicaid/CHIP during the year were considered to have no insurance.

Unlike children, Medicaid dental benefits for adults are optional and many states either do not provide such benefits or place limitations on dental services for adults. We did not have access to a state variable in the MEPS. The result is that some adults classified as
having public dental coverage could have actually had no dental benefits coverage.

We tested for statistically significant differences between 2000 and 2010 using t-tests while accounting for the complex survey design used for the MEPS.

**Results**

As shown in Figure 1 average real per-patient dental expenditures rose from $600 in 2000 to $653 in 2010.

Figure 2 shows average real per-patient dental expenditures by patient age. During the 2000s, real dental expenditures increased from $557 to $664 among adults 21 to 64 and from $655 to $796 among adults 65 years and older. Per-patient dental expenditures among children fell somewhat, but this difference was not found to be statistically significant. In 2010, the level of per-patient dental expenditures was highest among the elderly and the difference between the elderly and those in younger age cohorts was statistically significant (p<.0001).

Figure 3 shows real per-patient dental expenditures for adults by patient age and income level. Among adults 21 to 64 at or above 200% of the FPL, dental expenditures increased from $574 to $661. Among adults 65 and older at or above 200% of the FPL, expenditures increased from $685 to $841.

Figure 4 shows real per-patient dental expenditures by dental coverage status. Patients with private dental insurance had the highest per-patient dental expenditures from 2000 to 2010. However, the largest per-patient increase from 2000 to 2010 was among those with no dental coverage. Among all persons with no dental coverage, real dental expenditures rose from $490 in 2000 to $576 in 2010. By age, the largest increase among those with no dental coverage was among the elderly, from $585 in 2000 to $691 in 2010 (p=.09, not shown in Figure 4).

According to the 2010 MEPS, two-thirds (66.1%) of adults 65 and over had no dental coverage. Among adults 21 to 64 about one-third (34.4%) had no dental coverage and among children less than 21 years of age, 17.8 percent had no dental coverage (not shown in Figure 4).
Figure 1: Annual Real (2010 dollars) Per-patient Dental Expenditures, 2000 to 2010

Source: Medical Expenditure Panel Survey, AHRQ. Note: 2000 to 2010 change is statistically significant at the 5% level.

Figure 2: Annual Real (2010 dollars) Per-patient Dental Expenditures by Patient Age, 2000 to 2010

Source: Medical Expenditure Panel Survey, AHRQ. Note: Increases from 2000 to 2010 are statistically significant at the 1% level for age group 21 to 64 and at the 5% level for age group 65+. 
Figure 3: Annual Real (2010 dollars) Per-patient Dental Expenditures by Patient Income Level, 2000 to 2010

Source: Medical Expenditure Panel Survey, AHRQ. Note: Increases from 2000 to 2010 are statistically significant at the 1% level for adults 21 to 64 above 200% FPL and significant at the 1% level for adults 65+ above 200% of the FPL.

Figure 4: Annual Real (2010 dollars) Per-patient Dental Expenditures by Dental Coverage Status, 2000 to 2010

Source: Medical Expenditure Panel Survey, AHRQ. Note: 2000 to 2010 change for the uninsured is statistically significant at the 5% level.
Discussion

A separate research brief reported a flattening of per-capita dental expenditures since 2002. Compared to the period from 1990 to 2002, growth slowed from 2002 to 2008 and has been flat since 2008. At the same time, previous research has demonstrated that the percent of the population who see a dentist during the year is declining overall – a trend driven entirely by adults.

The results reported in this research brief help to explain why dental care utilization is falling, but inflation-adjusted spending per capita is stable. Among adults, a decline during the 2000s in the percent with a dental visit has been offset by an increase in real per-patient dental expenditures, especially among the elderly in the upper income category. Among children, an increase in the percent with a dental visit has coincided with flat per-patient dental expenditures. These trends among adults and children have contributed to a flattening of per-capita dental expenditures during the same period of time.

Among age groups, the largest increase in real per-patient dental expenditures during the 2000s was among the elderly, and in 2010 the level of per-patient dental expenditures was highest among the elderly. Higher expenditures among the elderly have been driven by large reductions in rates of edentulism. It is no longer appropriate to equate geriatric dental care with denture care as the mix of dental services among this age group has shifted to complex restorative procedures, as well as esthetic dentistry and implants.

As a result of the aging of the baby boomers, the elderly population is projected to increase from 48 million in 2015 to 92 million in 2060, or from 14.8% of the total population to 21.9%. The rising proportion of those over 65 years old combined with relatively high per-patient dental expenditures among the elderly could significantly increase dental expenditures among adults with a visit, buoying up the dental economy for years to come. However, in the longer term, as the elderly baby-boomers start becoming a smaller share of the population, and the age profile of the US population shifts to much younger adults, the dental economy could potentially suffer a downturn.

We found an increase during the 2000s in real per-patient dental expenditures among those with no dental coverage. Among those with no coverage, here too the largest increase in real per-patient dental expenditures was among the elderly. Patients with no dental coverage pay for services out-of-pocket. The increase in real per-patient dental expenditures among the elderly with no dental coverage may represent an increasing financial burden, especially among those with limited financial resources. This warrants further study. Given the absence of universal oral health insurance, a mix of financing options and reimbursement schema may be required to cover the costs of oral health care and eliminate disparities in oral health access and outcomes for the growing elderly population.
References


10 Bureau of Economic Analysis, Implicit Price Deflators for Gross National Income, http://www.bea.gov/iTable/iTable.cfm?ReqID=9&step=1


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