Key Messages

- **Dentist incomes have been stable since 2009. The average annual GP dentist income was $192,392 in 2011.**
- **Incomes began to decline in the mid-2000s, several years before the start of the Great Recession.**
- **There are important differences in dentist earnings by location, gender, and type of employment arrangement that warrant further analysis.**

Introduction

Average real net income of general practitioner (GP) dentists in private practice has declined sharply in recent years, reversing a decades-long trend of steady growth. As we demonstrated in an earlier analysis, this decline in income started well before the recent economic downturn, known as the Great Recession\(^1\). Our analysis also showed that a broad set of 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. In turn, the decline in utilization of dental care began in the early 2000s, well before the Great Recession, and turned out to be driven entirely by a decline in dental care utilization among adults\(^2\). Dental care utilization among U.S. children has steadily increased since 2000\(^2\).

In this research brief, we present an update on trends in dentist earnings since 2009. The U.S. economy is slowly beginning to recover and it is important to understand what has happened to dentist earnings since the end of the Great Recession. We present data for both GP and specialist dentists and discuss income differentials related to practice ownership, demographic characteristics, and geographic location. We end by discussing the policy implications of our findings.
Data & Methods

We rely on historical data from the American Dental Association’s Survey of Dental Practice\(^3\). This annual survey is conducted on a nationally representative random sample of 4,000 to 17,000 dentists in private practice. According to the most recent data available, 91.7% of practicing dentists in the United States are in private practice\(^4\). The response rates to the Survey of Dental Practice varied from 17–50%. The most recent year for which data are available is 2011. The survey oversampled specialists to ensure an adequate number of responses for statistical analysis. The dental specialties included within the ‘specialist’ category were oral and maxillofacial surgery, endodontics, orthodontics and dentofacial orthopedics, pediatric dentistry, periodontics, prosthodontics, oral and maxillofacial pathology, public health, and oral and maxillofacial radiology.

We defined dentist net income as gross billings minus total practice expenses. We converted all nominal values into constant 2011 dollars using the All Item Consumer Price Index\(^5\). We merged geographic variables related to the location of the dental practice using Rural-Urban Commuting Area (RUCA) codes\(^6\). The rural-urban classification used in this paper was based on a zip-code version of the RUCA file that is considered less accurate than the census tract version. Each dental practice in the study was assigned to a RUCA category using the practice zip code.

We developed a dentist net income regression model to analyze the effect of underlying demographic characteristics, such as age and gender. We used standard labor market explanatory variables\(^7\) to the extent they were available in the Survey of Dental Practice data set. For the regression analysis, we limited our sample to GP dentists less than 74 years of age who worked full-time (defined as more than 1,600 hours per year) and trimmed the top and bottom 2.5% of net income earners. We did not include hours worked as an explanatory variable due to the high degree of discretion dentists have over working hours. We used data only for the period 1996-2011 where there was sufficient consistency in the definition of key explanatory variables across time.

Statistical significance refers to the 5% level throughout, unless otherwise noted.

Results

Figure 1 shows average annual net income of GP dentists in private practice from 1982 to 2011 in constant 2011 dollars. The peak occurred in 2006 at a value of $219,501. By 2009, average net income fell to $191,495 representing an average annual decline of 4.4%. This decline was statistically significant. The peak year is slightly different than in our previous analysis\(^1\) where we included only owner GP dentists (the peak year was 2005). Since 2009, earnings have stabilized, with no statistically significant change. In 2011, average annual net income of GP dentists in private practice was $192,392.

Figure 2 shows average real net income separately for owner and employed GP dentists in private practice. The pattern over time is very similar for the two groups. The peak year differs (2005 for owners, 2004 for employees) but the decline for both groups began well before the recent economic downturn. In 2011, the gap in average net income between owner and employed GP dentists was $68,990 and was statistically significant. It is important to note that this is the unadjusted gap and does not control for differences in demographic characteristics between owners and employees.
Figure 3 shows average annual net income for specialist dentists. The peak was in 2007 at a value of $367,958. Similar to GP dentists, specialist dentist net income has been stable since 2009.

**Figure 1:** GP Dentist Average Annual Net Income (in 2011 dollars)

Source: American Dental Association, Health Policy Institute, Surveys of Dental Practice

**Figure 2:** GP Dentist Average Annual Net Income, Owner and Employed (in 2011 dollars)

Source: American Dental Association, Health Policy Institute, Surveys of Dental Practice
Figure 3: Specialist Dentist Average Annual Net Income (in 2011 dollars)

Table 1 summarizes the net income regression results. The regression-adjusted decline in GP dentist net income from 2005 (the peak year once various factors are controlled for) to 2009 was smaller than the unadjusted decline. This indicates that changes in demographic and employment characteristics of dentists account for some of the decline in net income over this period. The regression results confirm that net income had been stable since 2009, and has not rebounded with the end of the Great Recession.

There are several other results worth noting in Table 1. Controlling for age, gender, and location, owner GP dentists earned, on average, $45,821 more per year than employed GP dentists. This is about two-thirds the unadjusted difference of $68,990. Female GP dentists earned, on average, $36,260 per year less than male dentists. The net income of GP dentists practicing in isolated rural areas was, on average, $24,993 lower than in urban areas.

Table 1: General Practitioner Net Income Regression Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>$15,344</td>
</tr>
<tr>
<td>2009</td>
<td>-$6,099</td>
</tr>
<tr>
<td>Age</td>
<td>$11,443</td>
</tr>
<tr>
<td>Age squared</td>
<td>-$120</td>
</tr>
<tr>
<td>Owner</td>
<td>$45,821</td>
</tr>
<tr>
<td>Female</td>
<td>-$36,260</td>
</tr>
<tr>
<td>Large Rural</td>
<td>$3,423</td>
</tr>
<tr>
<td>Small Rural</td>
<td>$1,072</td>
</tr>
<tr>
<td>Isolated Rural</td>
<td>-$24,993</td>
</tr>
<tr>
<td>Number of Observations</td>
<td>9,458</td>
</tr>
</tbody>
</table>

Adjusted $^2$ 0.08

Notes: Dependent variable is annual net income (in constant 2011 dollars). Control variables include a full set of year dummies, age, age squared, gender, ownership status, location, and region. Omitted values are ‘2011’ for year, ‘employee’ for ownership status, ‘male’ for gender, and ‘urban’ for location. *** Significant at 1% level, ** Significant at 5% level, * Significant at 10% level. See methods section for description of sample.
Discussion

While we only have two years of post-Great Recession data, our results strongly suggest that dentist earnings have not rebounded. There are some important potential consequences that are worth noting. If earnings were to decline further, this could reduce the future supply of dentists since dentist net income relative to dental education costs is an important predictor of the dental applicant pool⁸. In turn, this could affect the viability of several new dental schools that have opened recently or are planned. An overall decline in dentist net income may also have an effect on the geographical distribution of dentists, the mix of patients whom dentists are able to treat (for example, patients covered by Medicaid versus those with private insurance) and dentists' ability to provide charity care¹. Due to these potential consequences, it is important to closely track the pattern of dentist earnings in the coming years.

It is important to note that the gender and geography effects cannot be interpreted as causal, since there are many variables that our data do not capture that could explain these differences. For example, employed dentists or female dentists could differ in terms of their patient mix, fee levels, or practice style. In fact, previous research has suggested that fee levels, patient mix and practice style are important factors explaining the gender gap in dentist earnings⁹, ¹⁰. Unexplained gender differences in earnings have been reported for many health care professions. For example, a recent study showed a significant gender gap in earnings among physicians that cannot be explained by specialty choice, practice setting, work hours, or other characteristics¹¹. In dentistry, the topic warrants further research. In terms of geography, our results indicate that GP dentists practicing in small and large rural areas did not have different net income levels than dentists practicing in urban areas. Previous studies have reported that a combination of population and per-capita income largely determine the viability of a private practice located in a rural area¹², ¹³, ¹⁴. Our analysis suggests the effects could become critical at the isolated rural area level.

Other data are consistent with our finding of stagnating net incomes and challenging economic times overall for dentists. A nationally representative survey of dentists in private practice indicated that 39% of dentists reported being ‘not busy enough’ in 2011¹⁵. This is significantly higher than the 2007 level of 19%. Results from the American Dental Association’s Quarterly Dentist Economic Confidence Survey indicate that in the third quarter of 2012, 45% of dentists felt ‘negative’ about overall economic conditions in their office compared to only 22% who felt ‘positive’¹⁶.

The economics of dentistry are changing. Due to a confluence of several factors, the profession finds itself at what could be a critical crossroads. New models of dental practice are emerging. There is rapid growth in large group practices and dental-service-organization-supported practice models¹⁷ that are thought to be more cost-effective than traditional solo or small group practices. Increased debt loads and changing preferences related to practice and life styles among new graduates are likely to have long-term effects on the profession. Health reform, with its increased focus on accountability, coordination of care, paying for outcomes and results rather than procedures, combined with the continued fiscal challenges within state budgets will lead to increased cost pressures on the dental care delivery system.

The pattern of utilization of dental care this past decade² could also be signaling what could be a dramatic shift in how adults – especially younger adults – utilize dental care and, more broadly, view oral
health. While more research is needed on the underlying causes of the decline in dental care utilization among adults, the available evidence indicates that while improved oral health$^{18}$ might be a factor, increased financial barriers to care are certainly a key driving force$^{19}$. Low oral health literacy also remains an important issue$^{20}$. Now more than ever, it is crucial for dentists, the public, educators, and policy makers to work together to reduce barriers to dental care to ensure all Americans have the opportunity to be mouth healthy for life.
References


15 Unpublished data from the American Dental Association, Health Policy Institute, Survey of Dental Practice.

16 American Dental Association, Health Policy Institute, Dentists' Economic Confidence—Third Quarter of 2012 (September 2012) Available at: http://www.ada.org/1441.aspx (accessed 12/14/2012)


Suggested Citation