

## Research Brief

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# Recent Trends in the Market for Endodontics

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## Key Messages

- *Endodontists are consistently the second-highest earning dental specialists.*
  - *Endodontists' incomes were hit the hardest by the impact of the Great Recession and, along with pediatric dentists, are the only dentists to see definitive signs of post-recession income recovery.*
  - *Endodontists' self-reported busyness levels are among the lowest of all dentists. General practitioner dentists tend to perform at least two-thirds of the most common endodontic procedures.*
  - *Endodontists are among the least likely dentists to work in corporate dental practice.*
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## Introduction

Over the past decade, the profession of dentistry has experienced a great economic transition, owed primarily to decreases in dental care utilization among adults.<sup>1,2</sup> Much attention has been given to how market factors have impacted the incomes of general practitioner (GP) dentists. Average real net incomes of GP dentists have declined over the past several years, with little data to indicate future recovery.<sup>3</sup> GP dentists are nevertheless the primary source of care for the dental patient. Dental specialists are referred to as necessary, and new analysis is needed to determine if economic trends experienced by GPs are applicable to or possibly influencing those of dental specialties.

In this research brief, we present data and economic trend analysis for the dental specialty of endodontics between the years of 2000 and 2014. We compare these trends to the dental profession as a whole. We then discuss the policy implications of our findings.

## Results

Figure 1 shows average annual inflation-adjusted net income by dental specialty for the years 2000 through 2014. Looking at general trends over this time period, the specialty of endodontics is consistently the dental specialty with the second-highest net income when both mean and median earnings are taken into consideration.

When adjusted for inflation, the best year of average income for endodontists was 2004, when endodontists made \$422,041. The only other dentists to have a top earning year in 2004 were oral surgeons. By comparison, GP dentists made \$213,501 in 2004 (in 2014 inflation-adjusted dollars). The worst years of average income for endodontists were 2012 and 2013. Not only were these the lowest earning years for endodontists, but they were the lowest earning years for average income for all dental specialists combined. In 2012, endodontists made \$290,654 compared to \$284,878 for all other dental specialists combined (in 2014 inflation-adjusted dollars). In 2013, endodontists made \$269,045 compared to \$293,033 for all other dental specialists combined (in 2014 inflation-adjusted dollars). GP dentists made \$189,734 and \$183,885 in 2012 and 2013 respectively. Most recently, in 2014, endodontists had an average income of \$325,844. This is in comparison to \$321,554 for all other dental specialists combined and \$174,780 for GP dentists.

Figures 2a, b and c show annual inflation-adjusted average fees and payments for non-surgical endodontic procedures. Trends show that fees for non-surgical endodontic procedures have remained constant since 2001. The highest fees for root canal procedures on premolars and molars were charged in 2004, when the incomes for endodontists were at their peak, and the lowest fees for premolar and molar root canals were in 2009, the final year of the Great Recession. Despite stagnant fees for non-surgical

endodontic procedures, payments have increased incrementally over time. However, on average, payment is only 70 percent of charged fees for these procedures.

For the years 2007-2014, Figure 3 shows an annual representation of the percentage of dentists reporting that they are “not busy enough.” Trend analysis indicates that based on perceived busyness, endodontists are consistently among the least busy dentists, only “busier” than orthodontists. The busiest years for endodontists were 2007 (25.6 percent not busy enough) and 2014 (31.3 percent not busy enough). The least busy years were 2010 (45.0 percent not busy enough) and 2011 (44.1 percent not busy enough). Perceived busyness reporting by endodontists does not appear to have a direct correlation with income.

In addition to the data in the figures presented above, data was collected regarding procedural and workforce trends in endodontics.

As seen in Figure 4, the most recent data (2005-2006) show that only 25.4 percent of all endodontic procedures are performed by endodontists. This is an increase from the 1990s when 20 percent or less of endodontic procedures were performed by endodontists (18.6 percent in 1990 and 20.3 percent in 1999).

The practice model of dentistry is beginning to shift from primarily solo owner and small group practices to corporate entities, and data has been collected to assess the current status of this trend.<sup>4</sup> In 2014, all areas of dentistry were participating in the corporate model to some degree. As shown in Figure 5, GPs were the most likely dentists to work in corporate dentistry in 2014, at 8.3 percent. Endodontists were

among the least likely dentists to work in corporate dentistry at 6.0 percent, equal to periodontists and greater only than prosthodontists at 3.8 percent.

## Discussion

The earnings of GP dentists represent a trend of multi-year decline.<sup>5</sup> While the incomes of dental specialists are more volatile than the income of general practitioners, it is undeniable that a broad set of factors intersected in the early 2000s that initiated a decline in dentists' average net income.<sup>3</sup> These factors, primarily linked to changes in adult dental care utilization, were compounded by the economic impact of the Great Recession from late-2007 to mid-2009.<sup>6</sup> By applying our knowledge of these market factors to collected economic data from 2000-2014, we can draw some conclusions about the recent economic trends in endodontics.

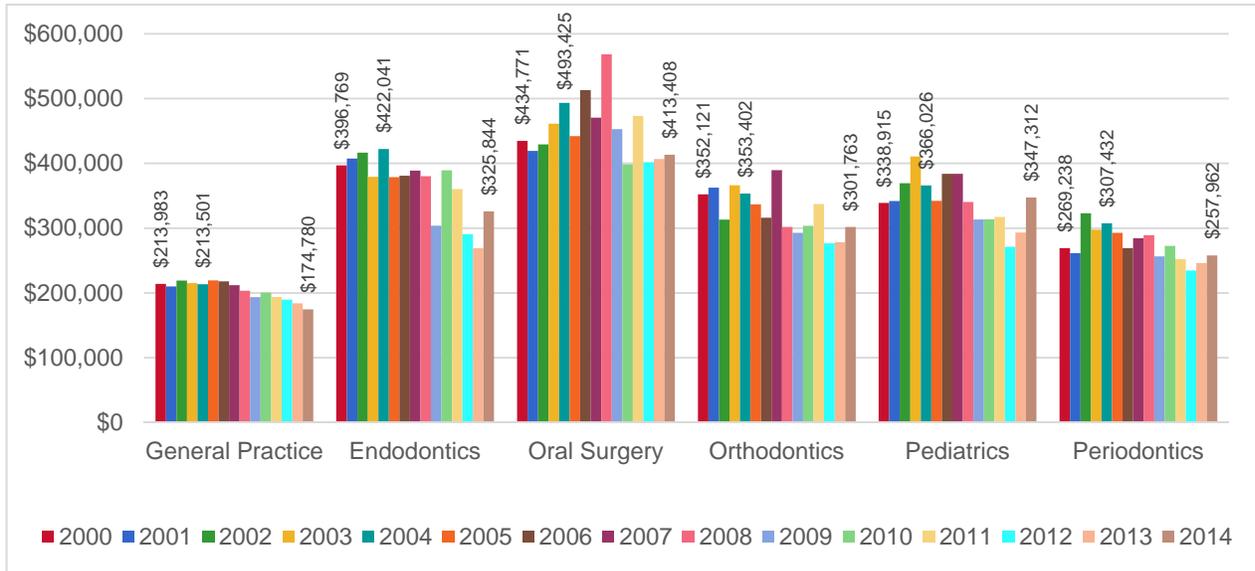
Analysis of mean income shows that when endodontists' incomes are at their highest (2002, 2004, 2010), they are making about \$200,000 more than GPs and on average \$67,000 more than all other specialists combined. When endodontists' incomes are at their lowest (2012, 2013), they are making \$85,000 to \$100,000 more than GPs and equal to or slightly less than all other dental specialists combined. Of all dental specialties, endodontists were hit the hardest when comparing pre-recession to post-recession incomes, with a loss of income of 16.4 percent. This is compared to a pre to post-recession loss of income of 11.3 percent for GPs, 14.5 percent for pediatric dentists and orthodontists, 11.0 percent for periodontists, and 3.0 percent for oral surgeons. Although endodontists experienced the greatest income loss, most recent

data from 2014 indicates signs of post-recession income recovery in mean and median incomes, a trend shared only by pediatric dentists. In 2014, endodontists saw their incomes rise, making about \$145,000 more than GPs and slightly more than all specialists combined when considering both median and mean income data. Endodontists have consistently been the second-highest earning dental specialty. However, this trend may be shifting, creating a new hierarchy wherein endodontists and pediatric dentists share second place.

An analysis of income along with all of the other reported economic data shows that the endodontic market is likely to undergo further change. This will depend of several factors, most influentially of which is supply and demand. Overall, the supply of endodontists is likely to rise. Demand is much more complicated to predict and there are not enough data to offer insights.

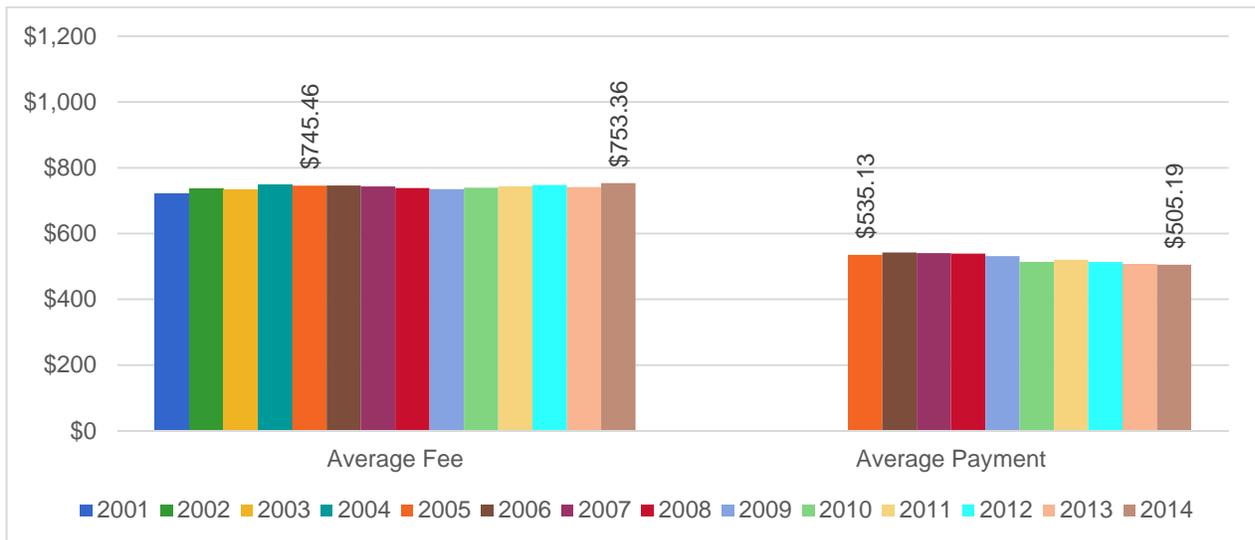
Components of supply and demand refer to several things with regard to endodontics, including the diagnostic need for endodontic procedures as well as future attitudes toward alternatives to endodontic procedures, such as extraction and implant placement. Another important aspect of supply and demand in endodontics is referral patterns between GPs and endodontists. An analysis of perceived busyness indicates that endodontists consistently report lower busyness levels than GPs for any given year (2007-2014), with the exception of 2014. Updated data is needed to continue to track the percentage of endodontic procedures performed by endodontists versus GPs.

**Figure 1:** Average Inflation-Adjusted Net Income for All Dental Specialties, 2000-2014



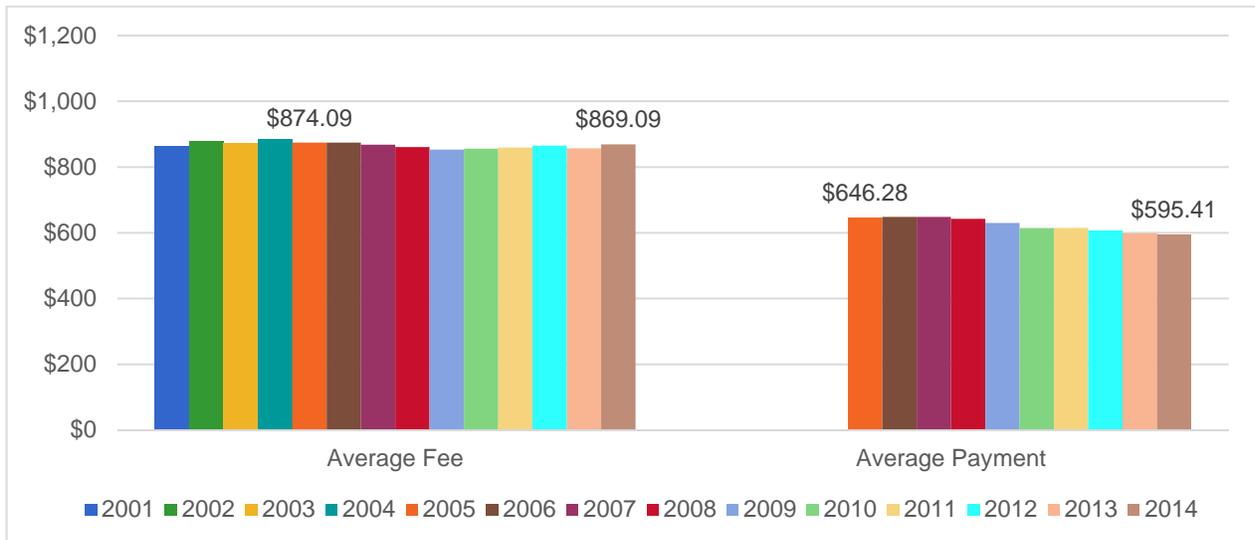
**Sources:** ADA Health Policy Institute Survey of Dental Practice data for 2000-2014. **Notes:** Weighted to compensate for oversampling and nonresponse bias. Incomes are deflated using the Consumer Price Index for All Items to represent 2014 dollars.

**Figure 2a:** Average Inflation-Adjusted Fees and Payments, D3310 Root Canal Therapy, Anterior Tooth



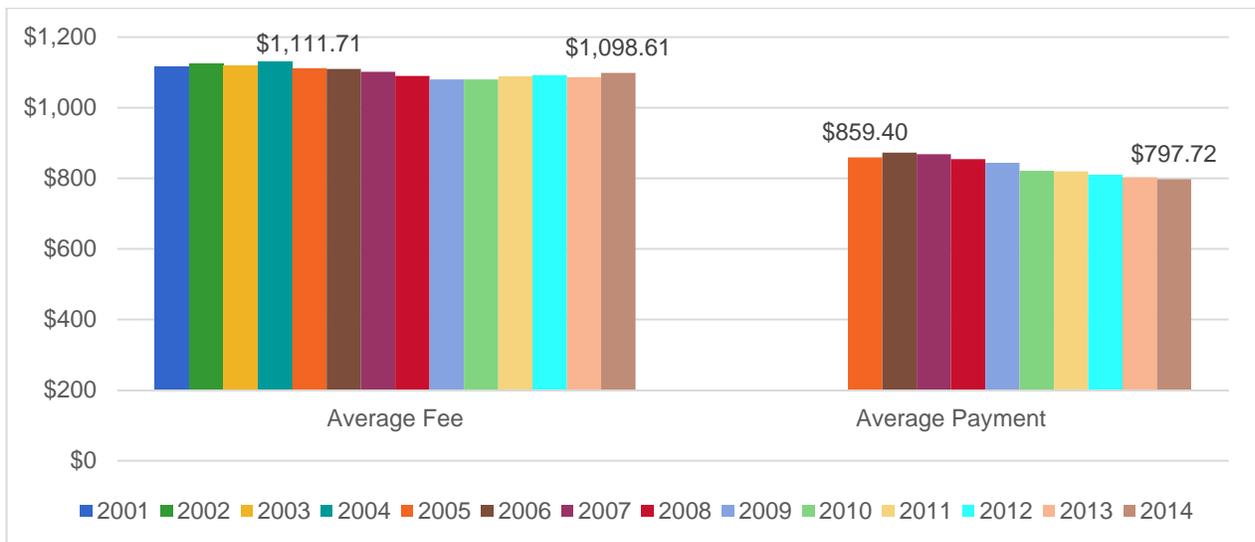
**Source:** Fee data from 2001-2014 FairHealth Database; payment data from 2005-2014 Truven MarketScan research databases. **Notes:** CPI-adjusted figures inflated to 2014 dollars using Dental Services CPI. Top three endodontic fees determined from 2010-2014 FairHealth Database.

**Figure 2b:** Average Inflation-Adjusted Fees and Payments, D3320 Root Canal Therapy, Bicuspid Tooth



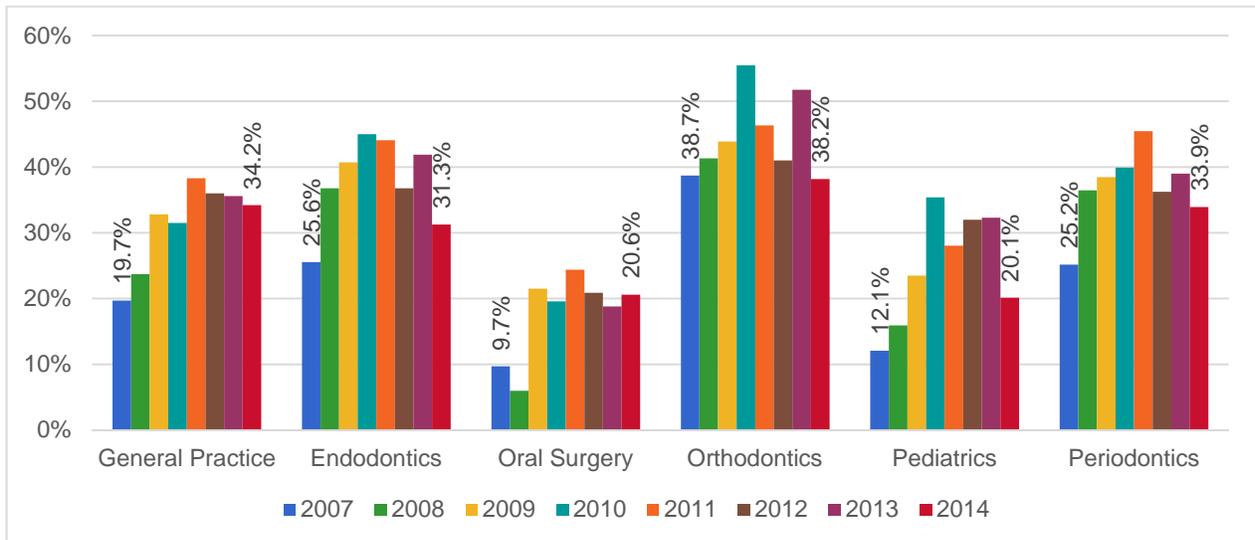
**Source:** Fee data from 2001-2014 FairHealth Database; payment data from 2005-2014 Truven MarketScan research databases.  
**Notes:** CPI-adjusted figures inflated to 2014 dollars using Dental Services CPI. Top three endodontic fees determined from 2010-2014 FairHealth Database.

**Figure 2c:** Average Inflation-Adjusted Fees and Payments, D3330 Root Canal Therapy, Molar



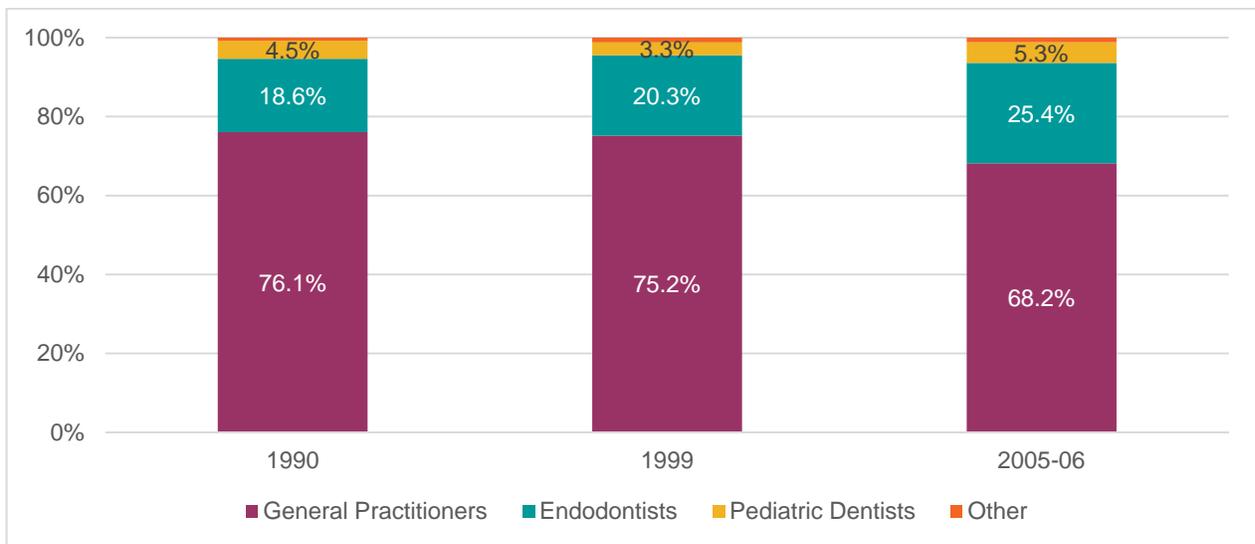
**Source:** Fee data from 2001-2014 FairHealth Database; payment data from 2005-2014 Truven MarketScan research databases.  
**Notes:** CPI-adjusted figures inflated to 2014 dollars using Dental Services CPI. Top three endodontic fees determined from 2010-2014 FairHealth Database.

**Figure 3:** Percentage of Dentists by Specialty Reporting They Are “Not Busy Enough”



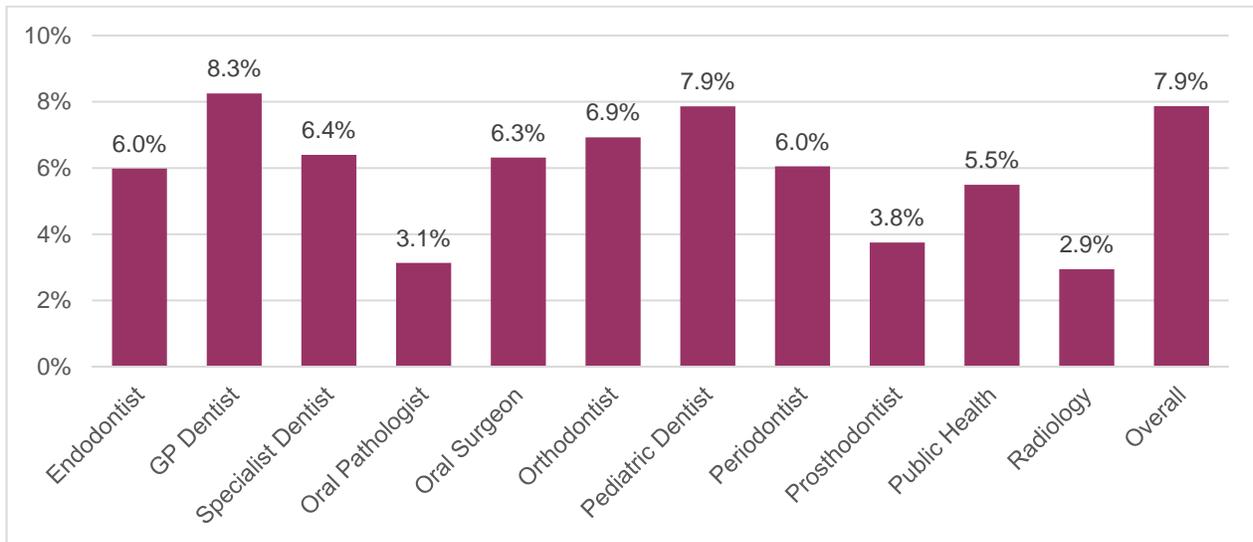
**Sources:** ADA Health Policy Institute Survey of Dental Practice data for 2007-2014. **Notes:** Weighted to compensate for oversampling and nonresponse bias.

**Figure 4:** Share of Endodontic Procedures by Dental Specialty (1990-2006)



**Sources:** ADA HPI 1999 Survey of Dental Services Rendered, Tables 18 and 35; 2005-06 Survey of Dental Services Rendered, Table 36.

**Figure 5:** Percentage of Dentists Participating in Corporate Practice by Specialty, 2014



**Sources:** Analysis of 2014 ADA Health Policy Institute office database.

## Data & Methods

To determine trends in specialist dentist earnings, we rely on the ADA Health Policy Institute’s Survey of Dental Practice. This annual survey is conducted on a nationally representative random sample of 4,000 to 17,000 dentists in private practice. Response rates to the Survey of Dental Practice from 2000 to 2014, our period of focus, varied from 14.0–44.6 percent. The most recent year for which data are available is 2014 and the response rate was 14.0 percent. The survey oversampled specialists to ensure an adequate number of responses for statistical analysis. During data cleaning, outliers were screened and dropped from the analysis where appropriate.

The survey asked dentists a variety of questions related to their practice, including their net income. Net income is defined as for “you only” and is income left over after practice expenses and business taxes and includes salary, commission, bonus and/or dividends, and any payments made to a retirement plan on the dentist’s behalf.

We adjusted dentist earnings for inflation using the All Items Consumer Price Index (CPI).

In addition, estimates for the years 2000 through 2014 were weighted to compensate for survey nonresponse bias with respect to these dentist characteristics: age group, general practitioner or specialist status, ADA membership status and county population corresponding to the dentist’s location.

The Survey of Dental Practice contains a question on busyness and offers respondents four choices: (a) Too busy to treat all people requesting appointments, (b) Provided care to all who requested appointments but was overworked, (c) Provided care to all who requested appointments but was not overworked, (d) Not busy enough, could have treated more patients. We focus on the survey years 2007-2014, when data is available.

To examine trends in endodontic fees and payments, we began by identifying the top three endodontic

procedures using data from the FAIR Health database for the years 2010-2014. Average fee data for the three endodontic procedures examined (D3310, D3320, D3330) were taken from the FAIR Health database for the years 2001-2014. FAIR Health provides charge data for dental procedures, billed using the ADA CDT® codes. FAIR Health contains non-discounted fees charged by providers before network discounts are applied. It does not contain data on actual reimbursement to providers.

Average payment data for the three endodontic procedures examined were taken from the Truven Health MarketScan® Research Databases (Truven) for 2005-2014. It is important to note that Truven is a database of dental spending based on reimbursement rates to providers that have been negotiated with private dental benefits plans. Truven does not necessarily represent what providers would typically charge for dental procedures. We break down dental spending according to what is paid by the insurer and the patient. We also calculate total patient outlays, including estimated dental benefits plan premium costs. We used the Consumer Price Index (CPI) inflation calculator from the United States Bureau of

Labor Statistics to adjust these average payments to 2014 dollars.

Data on the share of endodontic procedures by dental specialty were taken from the ADA Health Policy Institute's Survey of Dental Services Rendered. Data are from the survey years 1999 and 2005-2006 (the last year the survey was conducted). The survey was sent to professionally active dentists (i.e., not just dentists in private practice) and it was individualized by dental specialty. Respondents were asked the number of times they performed a specific procedure from the ADA CDT® codes.

To determine the share of endodontists in corporate practice, we analyzed the Health Policy Institute's 2014 office database, which contains the names and specialties of dentists employed in group practices that are members of the Association of Dental Support Organizations (ADSO). The HPI office database includes U.S.-based ADSO members only. Based on the total number of professionally active endodontists and the number of identified endodontists in group practice, we calculate the fraction of endodontists in group practice.

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