2011 JCO Orthodontic Practice Study
Part 1 Trends

ROBERT G. KEIM, DDS, EDD, PHD
EUGENE L. GOTTLIEB, DDS
ALLEN H. NELSON, PHD
DAVID S. VOGELS III

In this series of articles, we present the key results of the 2011 JCO Orthodontic Practice Study, the 16th biennial survey since 1981. Any JCO subscriber can access the complete tables and the questionnaire on our website at www.jco-online.com, using the link from this article in the Online Archive. The archive also contains articles and tables from all previous Practice Studies.

The first part of this report covers trends in the economics and administration of U.S. orthodontic practices, especially since the 2009 Study. Succeeding articles in the series will describe results related to practice success, practice growth, and other variables.

Practice Activity

Although the 2009 financial figures were fairly close to those of 2007, we surmised that the full effects of the recent recession may not have been reflected in the numbers, which were derived from calendar year 2008. This turned out to be the case, judging by a decline in most important categories compared to the last Study. Median gross income, which had never dropped in any previous two-year survey period, was down 1% (Table 1). On the other hand, median operating expenses also declined by 2%, even though the overhead rate rose 3% to its highest level ever. Median net income dropped by 2%—less than the 5% decline reported between the 2007 and 2009 surveys. Perhaps more disturbing is a reduction in numbers of patients, with 9% declines in both median case starts and median active cases compared to the previous Study. The median number of active cases and the median patients seen per day were the lowest since 1999. With the percentages of adult cases remaining about the same as in 2009, most of this fallback could be attributed to a drop in child starts.

Median child and adult fees remained virtually the same in calendar year 2010 as in 2008, even though respondents reported a 3% increase (still the lowest since these surveys began). The median initial payment stayed at 20%, and the median payment period returned to its 2007 figure of 22 months. Routine billing of patients also dropped back to the 2007 level after increasing steadily since 1983.

The percentages of gross income attributed to third-party insurance coverage and of respondents accepting assignment of benefits remained about the same as in the 2009 Study, but the median percentage of patients covered by third parties dropped to its lowest level since 2001. About two-thirds of the practices reported offering third-party financing plans, down from more than three-quarters in the 2007 Study.

Dr. Keim is Editor, Dr. Gottlieb is Senior Editor, and Mr. Vogels is Executive Editor of the *Journal of Clinical Orthodontics*, 1828 Pearl St., Boulder, CO 80302. Dr. Nelson is Director and Research Consultant, Nelson Associates, Nederland, CO. Send feedback to editor@jco-online.com.


Dr. Keim


Dr. Gottlieb


Dr. Nelson


Mr. Vogels

Years in Practice

Continuing a gradual aging of the Practice Study population, respondents reported a median age of 54 and a median 23 years in practice. When income and case load were broken down by number of years in practice, there was less of a peak in the 16-to-25-year range than in previous reports (Table 2). Gross income was fairly constant between six and 25 years, but overhead dropped and net income rose correspondingly after around 15 years in practice.

Operating expenses seemed particularly onerous for the newest practices. Still, respondents who had been practicing for 2-15 years, as well as 21-25 years, showed higher median gross income

METHODOLOGY AND LIMITATIONS

Questionnaires for the 2011 JCO Orthodontic Practice Study were mailed on April 21, 2011, to 10,956 orthodontists—a total that we believe should include virtually every specialty practitioner in the United States. As a reminder, an identical questionnaire was mailed to the same group on May 23.

In all, 385 forms were returned anonymously by business-reply mail, for a response rate of 3.5%. Responses were recorded on spreadsheets by an independent company, and analysis of the data was conducted using the Statistical Package for the Social Sciences.

As usual, any survey forms that were blank or illegible were not included. Furthermore, to ensure that only full-time solo practices were included in the tabulations, any respondents with less than one year in practice, more than one orthodontist-owner, or gross income of less than $60,000 *and* fewer than 50 case starts in 2010 were excluded from the overall analysis. After those general exclusions, 314 valid questionnaires remained. Any individual responses that were clearly erroneous or outside the range of possibility were then recoded as missing so they would not inappropriately affect the data.

The tables of trends published in this article include only five of the previous 15 biennial Practice Studies, spaced at regular time intervals for purposes of comparison. In general, however, the trends have been consistent from one survey to the next. When the tables report annual figures such as income and numbers of cases, they always refer to the preceding calendar year—in this article, 2010.

We prefer to report the median—the middle response when all responses are sorted from highest to lowest—instead of the mean—the more familiar arithmetic average—because the median is less likely than the mean to be influenced by extremely high or low responses. When medians are calculated independently of other variables, separate categories cannot be added together to produce an expected total; in other words, while mean net income plus mean operating expenses would equal mean gross income, the corresponding medians may not equate.

Tests of statistical significance can be performed only with mean values. All Practice Studies have used a significance level of "p" = .01, rather than the more common .05, because the large number of variables on our questionnaire increases the possibility that the results could be affected by chance.

It should be remembered that a statistical relationship does not necessarily establish a causal relationship. For example, if respondents who used a particular management method are found to have significantly higher net income than those who did not use the method, we should not conclude that the management method was completely responsible for the additional net income.

Because of the anonymity of this survey, it would be impossible for us to verify the accuracy of each individual response. Based on the consistency of geographic representation and overall trends since the first Study was conducted in 1981, however, we believe these results to be a valid basis for comparing orthodontic practices in the United States.

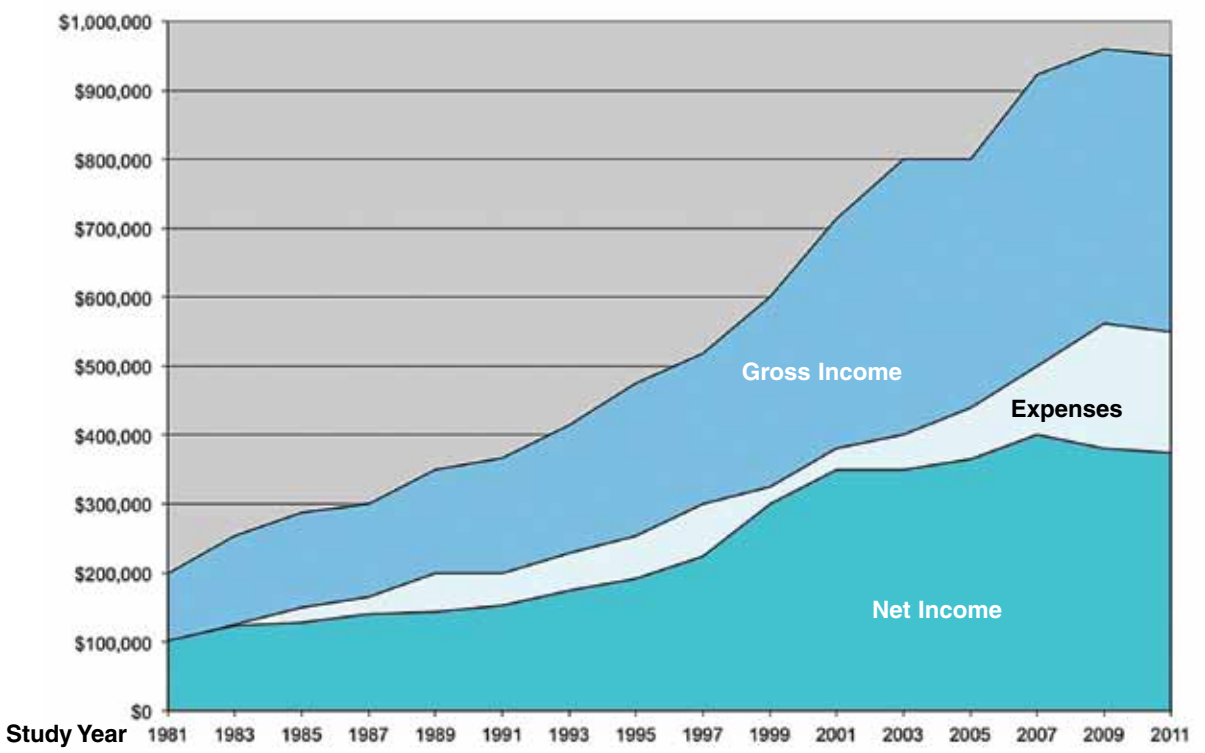

TABLE 1
PRACTICE ACTIVITY (MEDIANS)

	Year of Study*					
	1981	**1989**	**1997**	**2003**	**2009**	**2011**
Age	42	45	48	50	52	54
Years in Practice	12	15	17	18	22	23
Gross Income	$200,003	$350,000	$518,800	$800,000	$960,000	$950,000
Expenses	$100,003	$200,000	$300,000	$400,000	$562,500	$550,000
Net Income	$102,000	$143,000	$224,000	$350,000	$380,000	$374,000
Overhead Rate	49%	56%	55%	54%	56%	59%
Case Starts	150	150	180	212	220	200
Adult Case Starts	15.4%	22.3%	19.1%	18.8%	20.0%	20.0%
Active Treatment Cases	300	350	400	500	495	450
Female Active Cases	NA	60.0%	60.0%	59.5%	59.1%	58.2%
Adult Active Cases	15.2%	20.0%	15.4%	16.7%	18.0%	17.8%
Adult Female/Adult Active Cases	NA	70.1%	70.3%	67.8%	66.7%	68.4%
Child Fee (permanent dentition)	$1,900	$2,800	$3,600	$4,390	$5,150	$5,200
Adult Fee	$2,100	$3,000	$3,900	$4,800	$5,500	$5,550
Two-Year Fee Increase (reported)	15.5%	10.3%	10.0%	8.0%	6.0%	3.0%
Initial Payment	25%	25%	25%	25%	20%	20%
Payment Period (months)	24	24	24	22	21	22
Patients Routinely Billed	30.9%	31.6%	47.9%	49.6%	53.2%	51.0%
Patients per Day	38.4	40.0	45.0	50.0	50.0	45.0
Additional Cases That Could Have Been Handled	49.9	50.0	50.0	50.0	50.0	50.0
Patients Covered by Third Party	35.3%	41.3%	40.0%	45.0%	45.0%	40.0%
% Gross Attributed to Third Party	20.0%	25.0%	25.0%	25.0%	20.0%	20.0%
Accept Assignment of Benefits	37.5%	54.7%	76.1%	77.4%	80.8%	79.7%

*Dollar amounts and numbers of patients refer to preceding calendar year.

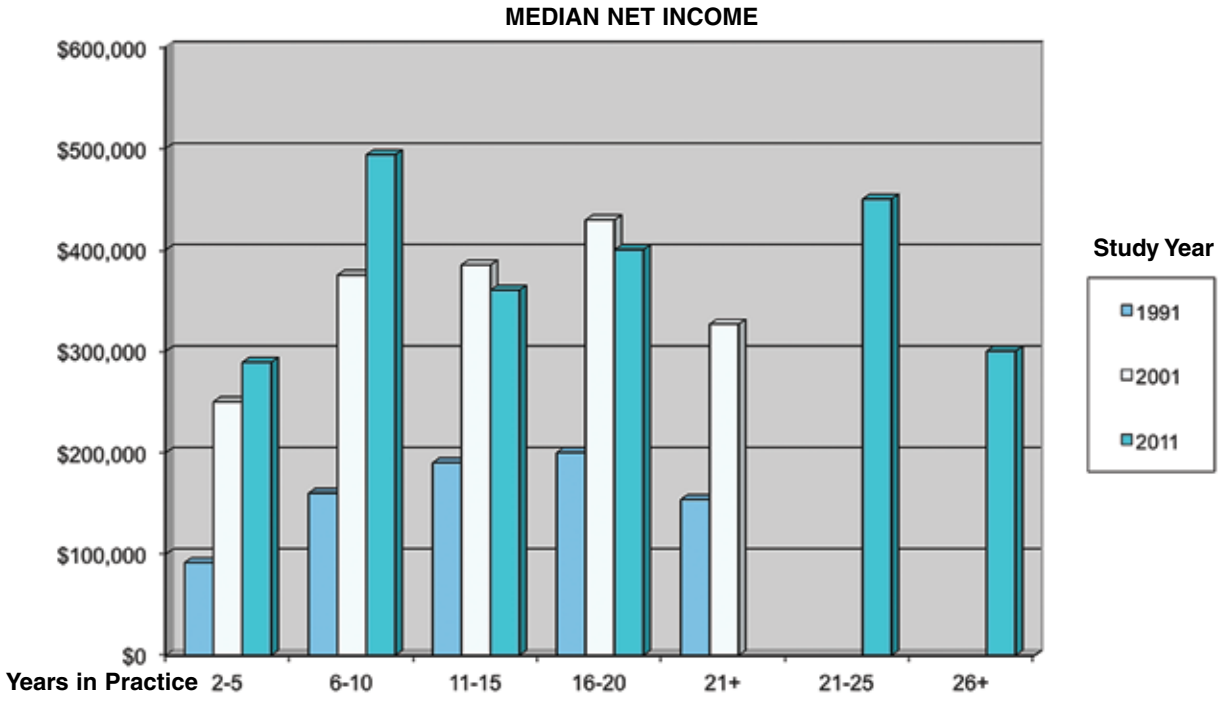

TABLE 2
PRACTICE ACTIVITY (MEDIANS) BY YEARS IN PRACTICE

	2011 Study					
	2-5	6-10	11-15	16-20	21-25	26 or more
Gross Income	$868,867	$1,180,000	$991,000	$1,060,000	$1,118,143	$811,500
Expenses	$605,467	$685,000	$593,700	$560,500	$566,600	$490,000
Net Income	$288,967	$493,633	$360,000	$400,000	$450,000	$300,000
Overhead Rate	68%	58%	63%	60%	53%	59%
Case Starts	198	250	210	200	218	169
Active Cases	450	600	425	485	500	388
Child Fee	$5,100	$5,387	$5,150	$5,475	$5,200	$5,100
Adult Fee	$5,280	$5,792	$5,800	$5,900	$5,600	$5,405

	2009 Study					
	2-5	6-10	11-15	16-20	21-25	26 or more
Gross Income	$751,147	$1,076,145	$790,000	$1,140,000	$1,050,000	$890,000
Expenses	$463,027	$650,000	$550,000	$643,000	$629,681	$450,773
Net Income	$335,000	$497,000	$276,000	$514,000	$387,500	$331,000
Overhead Rate	54%	52%	60%	56%	53%	55%
Case Starts	187	269	215	275	225	197
Active Cases	400	517	500	530	560	400
Child Fee	$5,000	$4,873	$5,200	$5,150	$5,000	$5,200
Adult Fee	$5,350	$5,300	$5,500	$5,475	$5,475	$5,570

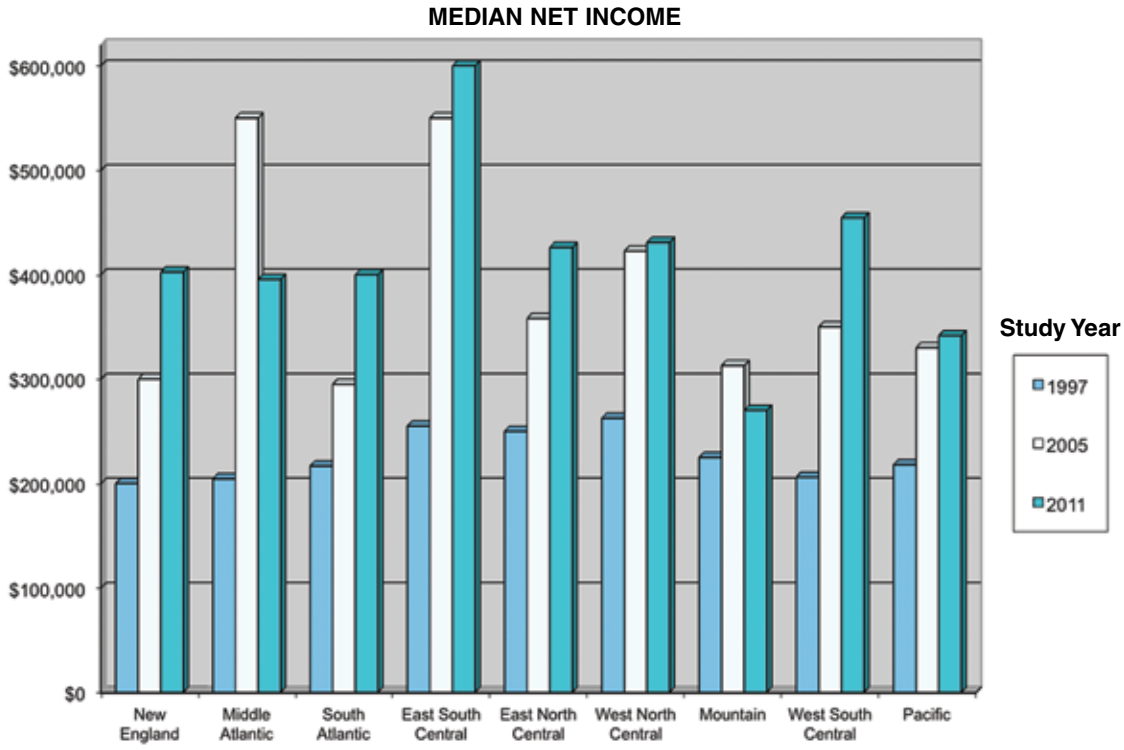

TABLE 3
PRACTICE ACTIVITY (MEDIANS) BY GEOGRAPHIC REGION

	Gross Income	Net Income	Overhead Rate	Case Starts	Child Fee
New England (CT,ME,MA,NH,RI,VT)	$1,000,000	$402,500	58%	203	$5,400
Middle Atlantic (NJ,NY,PA)	930,000	395,438	51%	200	5,200
South Atlantic (DE,DC,FL,GA,MD,NC,SC,VA,WV)	1,089,072	400,000	60%	242	5,343
East South Central (AL,KY,MS,TN)	1,300,000	600,000	53%	240	4,900
East North Central (IL,IN,MI,OH,WI)	1,050,000	426,000	58%	216	5,465
West North Central (IA,KS,MN,MO,NE,ND,SD)	1,000,000	431,000	54%	206	5,000
Mountain (AZ,CO,ID,MT,NV,NM,UT,WY)	800,000	270,094	63%	170	5,100
West South Central (AR,LA,OK,TX)	996,817	454,317	60%	221	5,100
Pacific (AK,CA,HI,OR,WA)	900,000	341,500	64%	186	5,150

compared to the 2009 Study. Median expenses were lower only for those in practice for 16-25 years, and net income was higher only in the 11-15 and 21-25 categories. All groups with at least 11 years in practice recorded declines in both median case starts and median active cases compared to the previous survey.

Geographic Region

Four regions declined in median gross income since the 2009 Study: Middle Atlantic, Mountain, West South Central, and Pacific. Median net income declined in only the Mountain and Pacific regions. Reductions in median overhead rate were seen in the Middle Atlantic, East North Central, and West North Central regions.

Compared to the previous survey, median case starts were down in all but the New England, Middle Atlantic, and South Atlantic regions. As in most past Studies, child case fees were fairly consistent across the country, but they actually

TABLE 4
USE OF MANAGEMENT METHODS

	Year of Study					
	1981	1989	1997	2003	2009	2011
Written philosophy of practice	22.1%	39.1%	48.6%	52.3%	59.8%	54.7%
Written practice objectives	15.0	27.8	29.4	33.9	39.4	30.7
Written practice plan	NA	16.3	17.8	21.9	21.8	20.3
Written practice budget	6.5	14.4	16.2	18.8	19.7	15.9
Office policy manual	54.7	59.3	71.8	78.8	83.7	81.8
Office procedure manual	NA	46.0	51.8	57.0	60.1	54.1
Written job descriptions	38.2	45.0	55.7	60.9	61.7	56.8
Written staff training program	NA	22.2	27.1	37.2	34.4	31.4
Staff meetings	67.7	80.8	82.2	82.1	84.2	84.5
Individual performance appraisals	32.3	49.8	56.9	62.1	66.5	58.4
Measurement of staff productivity	NA	11.1	15.7	17.2	16.6	14.5
In-depth analysis of practice activity	24.3	30.0	30.6	33.7	32.6	30.4
Practice promotion plan	NA	28.4	31.0	34.6	42.2	31.4
Dental management consultant	16.2	18.8	18.7	19.1	22.7	17.9
Patient satisfaction surveys	12.6	27.8	29.9	28.9	35.3	37.8
Employee with primary responsibility as communications supervisor	NA	25.7	29.6	23.8	23.6	25.7
Progress reports	NA	46.7	42.5	39.0	36.7	35.1
Post-treatment consultations	NA	42.5	38.5	33.9	32.3	33.4
Pretreatment flow control system	NA	52.6	48.6	43.0	46.6	48.6
Treatment flow control system	NA	19.2	23.4	25.2	23.6	29.4
Cases beyond estimate report	NA	19.7	26.5	32.3	33.9	34.8
Profit and loss statement	NA	67.5	72.1	74.8	73.6	76.4
Delinquent account register	NA	67.8	76.2	78.6	79.4	81.1
Monthly accounts-receivable reports	NA	64.7	78.9	79.0	83.5	82.1
Monthly contracts-written reports	NA	40.6	49.0	56.2	50.0	53.0
Measurement of case acceptance	NA	34.4	47.0	51.3	52.8	53.0

declined in the New England, Middle Atlantic, and Pacific regions compared to 2009, while staying the same in the Mountain states.

Use of Management Methods

Respondents' application of various management methods reached an all-time high with the 2009 Study, but the current survey showed even greater usage for 11 of the 26 items: staff meetings, patient satisfaction surveys, communications supervisor, post-treatment consultations, pretreatment flow control system, treatment flow control system, cases beyond estimate report, profit and loss statement, delinquent account register, monthly contracts-written reports, and measurement of case acceptance (Table 4). For staff meetings, patient satisfaction surveys, treatment flow control system, profit and loss statement, delinquent account register, and measurement of case acceptance, these were higher usage levels than in any previous Study.

Computer Usage

Practices continued to use computers more routinely than ever before, although slightly lower percentages than in 2009 reported using them for patient recall, appointment scheduling, practice analysis reports, word processing/correspondence, digital diagnostic records, and referring dentist access to records (Table 5). As in the last Study, more than 80% of the respondents said they had computerized their patient accounting/billing, patient recall, insurance forms, appointment scheduling, practice analysis reports, word processing/correspondence, and e-mail/Internet access. More

TABLE 5
ROUTINE COMPUTER USAGE

	Year of Study					
	1981	1989	1997	2003	2009	2011
Patient accounting/billing	68.0%	80.3%	91.1%	92.1%	94.3%	94.6%
Payroll/expense records	45.0	44.3	46.7	59.7	63.4	69.7
Inventory control	NA	NA	11.1	15.2	17.2	17.5
Patient recall	NA	62.1	79.4	77.6	85.7	84.5
Insurance forms	27.0	34.3	68.4	73.7	83.2	84.2
Appointment scheduling	14.0	25.5	63.6	80.2	92.2	91.2
Practice analysis reports	45.0	66.6	77.5	76.5	81.2	81.1
Word processing/correspondence	64.0	80.7	91.7	95.4	96.3	96.0
E-mail/Internet	NA	NA	NA	71.6	89.4	92.3
Treatment records	16.0	9.8	17.6	29.8	55.6	60.9
Cephalometric analysis	NA	NA	23.0	34.0	54.3	58.6
Digital diagnostic records	11.0	15.0	19.5	43.4	59.5	58.9
Cone-beam tomography analysis	NA	NA	NA	NA	NA	9.1
Monitoring treatment progress	18.0	13.1	14.8	19.6	34.5	39.4
Practice newsletter	NA	10.5	8.5	11.4	25.5	27.3
Website service	NA	NA	NA	33.3	66.7	70.7
Patient access to account and schedule	NA	NA	NA	NA	38.6	42.8
Patient access to own records	NA	NA	NA	NA	16.3	23.2
Referring dentist access to records	NA	NA	NA	NA	15.9	14.8
Remote access by orthodontist and staff	NA	NA	NA	NA	45.1	45.1

than 60% were also using computers routinely for payroll/expense records, treatment records, and practice website service.

Delegation

Routine delegation of various tasks to staff members also continued to increase (Table 6). Compared to the 2009 Study, the only exceptions to this trend were fabrication of archwires, insertion of archwires, adjustment of removable appliances, financial arrangements, and post-treatment conferences. Tasks that were routinely delegated by more practices than ever before were impres-

TABLE 6
ROUTINE DELEGATION

	Year of Study					
	1981	1989	1997	2003	2009	2011
Record-Taking						
Impressions for study models	59.2%	74.8%	86.9%	91.0%	89.2%	93.1%
X-rays	84.4	89.3	91.9	93.9	93.3	94.7
Cephalometric tracings	57.3	50.9	40.5	42.3	36.2	38.5
Clinical						
Impressions for appliances	47.3	62.1	71.9	80.0	80.6	86.1
Removal of residual adhesive	74.6	70.1	39.4	33.7	33.7	38.4
Fabrication of:						
Bands	37.5	49.4	56.0	54.2	53.2	58.1
Archwires	20.4	28.7	27.3	29.7	32.9	31.5
Removable appliances	46.1	45.9	40.6	47.0	41.6	45.8
Insertion of:						
Bands	7.0	12.7	17.4	24.5	30.1	35.6
Bonds	9.3	9.0	8.5	10.8	11.4	15.3
Archwires	26.2	38.5	46.4	58.6	61.3	57.4
Removable appliances	9.6	14.9	15.8	19.1	24.2	26.2
Adjustment of:						
Archwires	3.4	5.6	9.4	12.3	13.3	14.1
Removable appliances	2.3	4.5	5.9	7.6	10.5	10.1
Removal of:						
Bands	28.2	41.0	48.4	55.2	55.5	58.6
Bonds	24.8	38.8	46.6	53.3	53.7	60.1
Archwires	66.0	72.1	75.6	80.4	80.1	82.1
Administrative						
Case presentation	3.6	11.8	18.5	25.2	23.9	24.0
Fee presentation	15.9	30.0	51.6	71.0	75.1	75.3
Financial arrangements	50.3	64.8	76.8	84.2	87.4	87.2
Progress reports	9.0	16.5	24.3	27.9	26.0	28.5
Post-treatment conferences	3.9	12.6	15.1	18.4	18.6	17.2
Patient instruction and education	73.8	80.9	84.2	90.2	88.2	88.6

TABLE 7
USE OF PRACTICE-BUILDING METHODS

	Year of Study					
	1981	1989	1997	2003	2009	2011
Change practice location	20.1%	29.2%	27.8%	26.3%	29.5%	26.7%
Expand practice hours:						
Open one or more evenings/week	NA	29.6	26.9	16.8	17.4	16.9
Open one or more Saturdays/month	NA	23.0	15.7	10.5	11.6	11.1
Open a satellite office	39.9	46.9	40.1	32.3	32.6	26.7
Participate in community activities	61.5	59.1	58.8	54.8	62.1	62.0
Participate in dental society activities	67.0	64.6	59.3	53.4	60.8	56.5
Seek referrals from general dentists:						
Letters of appreciation	81.9	83.7	79.0	72.7	70.5	71.8
Entertainment	61.6	62.6	58.7	54.5	57.4	57.6
Gifts	45.2	62.2	68.9	69.4	74.5	75.3
Education of GPs	41.2	42.7	37.5	34.1	40.8	42.7
Reports to GPs	64.5	75.2	71.8	68.4	69.2	68.6
Seek referrals from patients and parents:						
Letters of appreciation	62.8	78.2	70.1	60.0	62.1	60.8
Follow-up calls after difficult appts.	NA	67.5	68.6	62.0	67.9	67.1
Entertainment	17.1	10.7	14.5	18.2	27.6	23.9
Gifts	16.3	23.0	33.2	39.4	46.6	49.0
Seek referrals from staff members	NA	53.9	53.9	49.9	56.8	56.9
Seek referrals from other professionals (non-dentists)	NA	33.5	30.0	26.0	25.8	29.8
Treat adult patients	51.0	88.0	84.7	83.0	85.0	82.4
Improve scheduling:						
On time for appointments	47.4	72.7	71.2	69.8	77.1	73.7
On-time case finishing	NA	58.8	61.1	60.4	68.9	65.5
Improve case presentation	44.4	48.9	52.4	46.4	49.7	49.8
Improve staff management	47.5	46.1	44.1	43.3	44.7	40.8
Improve patient education	27.7	39.7	43.5	40.1	45.3	48.6
Expand services:						
TMJ	NA	55.7	34.4	24.8	24.2	25.1
Functional appliances	NA	58.8	36.6	29.4	28.9	22.0
Lingual orthodontics	NA	24.3	12.3	9.6	17.4	14.1
Surgical orthodontics	NA	69.9	51.8	38.0	43.2	36.9
Temporary anchorage devices	NA	NA	NA	NA	NA	42.0
Invisalign treatment	NA	NA	NA	52.0	53.5	63.9
Cosmetic/laser treatment	NA	NA	NA	NA	15.8	22.0
Patient motivation techniques	NA	34.0	38.2	37.6	40.3	48.2
No-charge initial visit	42.6	60.5	67.9	75.8	79.7	84.3
No-charge diagnostic records	NA	NA	NA	22.3	27.6	29.0
No initial payment	NA	NA	NA	16.0	17.1	21.2
Discount for up-front payment	NA	NA	NA	NA	81.3	80.0
Extended payment period	NA	NA	NA	31.0	48.4	53.0
Practice newsletter	NA	19.6	13.9	12.7	21.3	28.6
Practice website	NA	NA	NA	NA	NA	73.7
Personal publicity in local media	NA	14.0	15.3	13.8	19.5	23.1
Advertising:						
Yellow pages boldface listing	NA	42.2	53.2	59.2	60.0	59.6
Yellow pages display advertising	NA	12.2	20.3	27.3	30.5	32.5
Local newspapers	2.4	8.0	15.3	17.5	22.6	22.7
Local TV	NA	NA	1.8	5.3	5.5	9.4
Local radio	NA	NA	3.5	6.1	7.1	11.0
Online advertising	NA	NA	NA	NA	NA	22.4
Direct-mail promotion	1.0	6.3	6.5	10.7	17.9	21.2
Managed care	NA	NA	20.1	12.5	13.2	19.6
Affiliation with mgt. service organization	NA	NA	NA	4.7	3.3	2.4

TABLE 8
SOURCES OF REFERRALS

	% of Practices Using Source					Median % of Referrals (All Practices)				
	1983	1989	1999	2009	2011	1983	1989	1999	2009	2011
Other Dentists (GPs)	98.0	99.2	98.9	97.8	96.5	50.2	50.0	50.0	41.0	40.0
Other Dentists (specialists)	68.4	71.7	65.3	69.5	59.0	2.4	2.0	2.0	2.0	1.0
Patients	97.8	98.8	98.4	97.4	95.1	30.7	30.0	30.0	35.0	35.0
Personal Contacts	NA	66.6	64.6	64.4	61.5	NA	2.0	2.0	2.0	2.0
Transfers	NA	74.2	65.0	57.9	56.5	NA	1.0	1.0	1.0	1.0
Staff	54.0	51.5	49.4	48.8	44.5	0.8	1.0	0.0	0.0	0.0
Other Professionals	41.2	32.9	23.9	20.7	22.3	0.3	0.0	0.0	0.0	0.0
Dental Franchises	NA	0.7	1.3	0.7	0.4	NA	0.0	0.0	0.0	0.0
Dental Referral Service	3.8	2.9	2.0	1.9	2.8	0.0	0.0	0.0	0.0	0.0
Direct-Mail Advertising	1.2	2.6	4.6	8.7	7.1	0.0	0.0	0.0	0.0	0.0
Yellow Pages	47.2	45.8	40.9	40.1	29.0	0.4	0.0	0.0	0.0	0.0
Internet	NA	NA	NA	NA	55.8	NA	NA	NA	NA	1.0
Commercial Advertising	1.8	4.2	9.1	13.7	15.5	0.0	0.0	0.0	0.0	0.0
Drive-By Signage	NA	NA	NA	26.9	25.4	NA	NA	NA	0.0	0.0
Managed Care (Capitation/Closed Panel)	3.7	6.9	14.6	11.3	12.4	0.0	0.0	0.0	0.0	0.0

sions for appliances; fabrication of bands; insertion of bands, bonds, and removable appliances; adjustment of archwires; removal of bonds; fee presentation; and progress reports.

Use of Practice-Building Methods

As in the previous report, respondents seemed to concentrate their practice-building efforts on patient finances and external marketing (Table 7). Methods used by as many or more respondents in 2011 than in any previous survey: education of GPs, gifts to patients and parents, seek referrals from staff members, improve patient education, Invisalign treatment, cosmetic/laser treatment, patient motivation techniques, no-charge initial visit, no-charge diagnostic records, no initial payment, extended payment period, practice newsletter, personal publicity in local media, yellow pages display advertising, advertising in local TV and radio.

The only practice-building methods that were used by the lowest-ever percentages of respondents were open a satellite office, improve staff management, functional appliances, and surgical orthodontics. Discounts for up-front payment decreased slightly from 2009, when this item was first included.

Sources of Referrals

General dentists continued to decline in influence as referral sources, with almost as many referrals now coming from patients (Table 8). (The percentages do not add up to 100% because medians are reported instead of means.) Other sources still provided a median of 2% or fewer referrals, although a higher percentage of respondents than in any previous survey reported at least some referrals from commercial advertising. The Internet, which had not previously been listed on the questionnaire, provided referrals to a majority of practices.

(TO BE CONTINUED)