

**Survey of Practice Administration Training  
In Graduate Orthodontic Programs**

Keith J. Kohrs, DDS  
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Department of Orthodontics  
School of Dentistry  
Oregon Health & Sciences University

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## 1.0 Introduction

This study was originally conceived as a method of determining the current status of practice administration training in graduate orthodontic programs, and the effectiveness of this training as perceived by recent graduates. The goal was to compile a body of descriptive information to serve as a framework for the design and implementation of a practice administration training curriculum in the orthodontic department at Oregon Health & Sciences University (OHSU), as well as other interested departments across the country. For the purpose of this study, practice administration training is defined in detail in Section 2.3.

The first survey was intended for orthodontic program directors to complete regarding their respective programs. Questions in the survey were analyzed to characterize the existence of practice administration training, the amount of training, and the format of the training and the topics covered in each department. The same information was requested of the program directors regarding practice administration training in their respective programs three years ago. This information will aid in the evaluation of practice administration training in orthodontic programs over time. In addition, survey respondents were asked to provide their opinions regarding the role of graduate orthodontic programs in practice administration training and the obstacles of including this training in graduate orthodontic programs.

The second survey is intended for recent (less than 3 years) graduates. It requests demographic information, and asks questions corresponding to those asked of the department chairs concerning practice administration training in their respective graduate orthodontic programs. The second section attempts to characterize the recent graduate's needs for practice administration training following graduation and the financial impact of receiving this training after graduation. Recent graduates were also asked their opinions regarding the role of graduate orthodontic programs in practice administration training and the obstacles of including this training in graduate orthodontic programs.

This two-survey approach was intended to determine the impact and interest of graduate orthodontic programs and recent orthodontic program graduates, allowing for the comparison of results for the two populations. Survey data was analyzed to characterize the current status of practice administration training in graduate orthodontic programs (program directors and recent graduates) compared to three years ago (program directors) and to formulate recommendations concerning the types of training recent graduates believe would have been useful in the early years of their career.

## **2.0 Literature Review**

Managing, marketing, and controlling all aspects of a business require background training that most orthodontists do not have. Many of today's young orthodontists have an extremely limited knowledge base in practice administration. As a result, doctors often have overhead costs that are higher than necessary and continue to make elementary business and communication mistakes that may affect their ability to efficiently deliver high-quality treatment.<sup>1,2,3</sup> Due to course requirements for admission into dental school, few applicants enter dental school with business training at the undergraduate level.<sup>4</sup> While most dental schools provide some generalized form of practice administration curriculum, some authors have questioned the effectiveness of this training, and its applicability to the specialty practice of orthodontics.<sup>1,5,6</sup>

### **2.1 Practice Administration Training in Undergraduate Dental Education**

Since the 1970's, the dental literature has encouraged dental schools to develop and expand practice administration curriculum.<sup>7,8,9</sup> In the early 80's, the American Association of Dental Schools (AADS) published curricular guidelines for the teaching of practice administration.<sup>10</sup> The guidelines were later revised and updated in 1985 and 1993.<sup>11</sup> In 1998, the American Dental Association (ADA) revised dental accreditation standards to include competencies; eight of which have been related to practice administration.<sup>5,12</sup>

Despite this increase in attention by the educational associations, surveys of dental school seniors in the 1980's and 1990's have continually indicated that 30-40 percent of students feel that "inadequate" time is devoted to practice administration training.<sup>13,14</sup> This large percentage of dissatisfied students indicates that this topic needs to be evaluated further by the respective dental programs. Additional institutional surveys of recent dental school graduates seem to support this "inadequate" status.<sup>15</sup>

Surveys of the undergraduate dental schools' practice administration curricula completed in 1984 and 1992 found that according to the respondents, little had

changed in that period of time, and that practice administration curricula were a mature and secure component of dental education.<sup>16,17</sup> More recently, a 1998 study by Lange et al examined the status of practice administration training in undergraduate dental education.<sup>5</sup> The series of studies by these authors allowed for examination of trends over the last decade in this area of dental education. Lange et al reported that the format of this education has become more lecture-based over the years, with fewer clinical hours devoted to practice administration. Additionally, faculty consistently had responsibilities outside practice administration, or had been part-time faculty. Overall, from 1984 to 1998, the topics in practice administration training changed. The number of topics has remained constant. However, the number of hours of practice administration training has decreased by an average of 18 hours.<sup>5</sup> A 1997-1998 ADA survey reported that dental students received an average of fifty-seven hours of instruction covering all areas of practice administration<sup>18</sup> This number of hours is less than a typical undergraduate business student receives in each area of the basic business disciplines (accounting, finance, management).<sup>15</sup> Several authors, considering that a dental student is many times more likely than a business school graduate to personally own and operate a corporation, found this number to be "alarming."<sup>1,6,15</sup>

Greenwood et al evaluated the competency of dental school graduates across all areas of dental education. Their findings indicated that of all fifty-eight areas of competency evaluated, financial management and personnel management were 2 of the 3 areas in which dental graduates felt the least prepared.<sup>6</sup> The results of this University of Toronto study were replicated by several earlier studies at other institutions throughout the 1980's and 1990's.<sup>4,19,20,21,22</sup>

Donnelly specifically noted that 92% of graduating students said they would gain confidence if they had more courses in business management.<sup>4</sup> The current emphasis on practice management may be insufficient to prepare graduates, and may not meet the competence levels required for accreditation standards.<sup>5</sup>



## **2.2 Practice Administration Training in Graduate Orthodontic Programs**

Information compiled about the trends and the current status of practice administration training can be applied to graduate orthodontic programs in general. However, while dental education has been exploring the area of practice administration curriculum for several decades, little has been published concerning the same training in graduate orthodontic programs.

A series of surveys by Sinclair et al evaluated orthodontic graduate education in 1983, 1989, and 1994.<sup>23,24,25</sup> Sinclair et al noted that between 1983 and 1994 orthodontic programs increased in length. While in 1983 only 6.1% of programs were thirty months or longer, 38.8% were thirty months or longer in 1994. Over the same period of time, the percentage of programs reporting the inclusion of a formal course in practice management increased from 63% to 79%.<sup>25</sup> These reports conflict with more recent reports which indicated training programs offer 1 or 2 outside speakers who lecture to the residents on an occasional basis, with no overall structure, goals, coordination, or formal training.<sup>1,2,3</sup>

Sinclair and Grady have proposed a practice administration curriculum for graduate orthodontic programs. Currently being implemented at the University of Southern California, their curriculum has four major components: structured seminars, graduate clinic operations, exposure to well-managed contemporary orthodontic practices, and a practice management study club. While still in its early stages, this “total-package” approach appears to be promising.<sup>1</sup>

## **2.3 Topics Recommended for Inclusion in Practice Administration Curricula**

Practice administration is a frequently used phrase in the discussion of dental education. However, a specific definition is seldom given. The majority of authors simply use the term, and provide a list of topics they expect would be considered part of this area of interest. In 1999, Lange et al specifically defined practice administration as “the body of knowledge that prepares dental students

to understand and utilize economic, marketing, financial, sociological, technological, legal, and ethical perspectives to manage a dental practice.”<sup>5</sup> While providing a definition is a step in the right direction, educators are still left with the decisions concerning specific topics for inclusion in curricula.

The range of topics that could be included in the area of practice management is nearly limitless. Lange et al broke practice administration training into 17 topics ranging from practice philosophy to equipment maintenance.<sup>5</sup> Other authors, basing their findings on surveys of experienced practitioners, placed more emphasis on interpersonal skills and stress management, and less on administrative skills.<sup>26</sup> Those studies which examined recent graduates’ opinions concluded that practical knowledge for the transition into a private practice is most important. These studies list topics such as setting fees, incorporation, handling methods of payment, personnel management, and financial management.<sup>4,6</sup> European authors have taken the approach of formalizing office visit programs which pair students with established practitioners with the intent of communicating the knowledge gained from practice experience. Their initial efforts have yielded positive results for both the students and the practitioners.<sup>27</sup> Many authors feel that training in computer technology and the use of information technology should be at the forefront of practice administration training as well as all fields of dental education.<sup>28,29</sup> Specifically, Willis et al have proposed the concept of computer simulations for use in practice administration training.<sup>30</sup> Undoubtedly, the decisions facing practice administration curriculum planners are difficult.

Several authors recommend creating a practice administration training curriculum around the skills new graduates will need based on their career plans following graduation.<sup>4,6</sup> The studies which examine practice arrangements for recent graduates can be broken into two main groups, those evaluating preferred practice arrangements, and those evaluating graduates’ planned practice arrangements. It has been consistently reported for several decades that new dental graduates view solo ownership as the most favorable

practice arrangement.<sup>4,31</sup> A 1998 ADA survey determined that over half of dental graduates immediately enter private practice upon graduation.<sup>14</sup> This indicates that practice ownership and management is a goal of the majority of dental students. Through examining actual practice arrangements for dental graduates, reports indicate that while only 3% of graduates work in a solo general practice environment their first year, the number increases to 16% within three years, and is expected to continue rising as the practitioners mature.<sup>6</sup> In studies looking specifically at orthodontic graduates, 43.2% of residents indicate plans to practice as either a solo owner or partner in a practice.<sup>32</sup> These much higher percentages underscore the need for practice administration training specific to the needs of orthodontics during postgraduate training.

Sinclair and Grady have made specific recommendations of topics to be included in practice administration training within a graduate orthodontic program. Their recommendations include a structured format based around six key topics: practice leadership and goal setting, practice location and development, office management and communication, office finances, office staff, and personal finances.<sup>1</sup> To date, this is the only recommendation specific to orthodontic practice administration training.

Consistently mentioned in the literature is the importance of teaching students to think through management decisions. By providing the tools and mindset to solve problems and adapt to new developments, practice administration training can provide graduates with a knowledge base on which to fall back.<sup>1,4,15,33</sup>

## **2.4 Consequences of a Lack of Practice Administration Training on Recent Graduates**

Most authors are quick to acknowledge the limitations of practice administration training when compared to the knowledge gained through “real world” experience. However, there are some very real consequences to the lack of

knowledge from which most new practitioners suffer. Several authors have expressed concern about graduates with little or no practice administration training facing decisions about working for or with large, corporately owned dental practices and certain types of insurance companies. Authors claim many of these companies use new graduates lack of business savvy to entice them into salaried positions where treatment quality is often second in importance to production.<sup>1,4,5,31</sup>

Citing increasing debt levels for graduates, authors point out the huge financial burden new practitioners face.<sup>13,14,32</sup> Add to this burden running a business without any previous business training, and most authors concede that management groups may seem like a viable option to new graduates. However, they believe that by increasing practice administration training, new practitioners will have greater confidence in their abilities to enter more traditional private practice environments.<sup>1,6,31</sup>

The cost of obtaining practice administration training following graduation can be staggering. Based on average consulting fees charged in today's marketplace, it is estimated that a comprehensive practice administration training program could save each student \$20,000 or more during the first five years of practice.<sup>1</sup>

### **3.0 Research Objectives**

The objective of this study was to assess the current level of practice administration training in graduate orthodontic programs across the United States, and to identify the areas recent graduates believe would have made their transition to private practice smoother. In order to best accomplish this objective five basic topics were addressed:

- Program length and practice arrangement;
- Amount and type of practice administration training included in graduate orthodontic programs;
- Topics currently included and those recommended for inclusion in practice administration training;
- Sources used and costs for practice administration training following graduation; and
- Possible reasons for limited inclusion of practice administration training in graduate orthodontic programs.

## **4.0 Materials and Methods**

To assess the current level of practice administration training in graduate orthodontic programs, two surveys were designed and distributed. The surveys were distributed by OHSU campus mail service and the US Post Office (USPS) and returned in the provided business reply envelope by the USPS. The information contained in the returned and completed surveys was entered into a database to allow for analysis and production of descriptive statistics.

### **4.1 Survey Design**

The surveys were designed in the Department of Orthodontics at OHSU, and pilot tested by current orthodontic residents and faculty. Slight changes in language and format were made to both surveys for increased clarity and ease of completion. For the purposes of this survey, the definition of practice administration training was adapted from Lange et al (see Section 2.3).<sup>5</sup>

#### **4.1.1 Survey of Graduate Orthodontic Programs**

Recognizing the severe time constraints on program directors, as well as the number of surveys received annually by each department, extra efforts were made to keep this survey as short and efficient as possible, while maintaining the quality of the information requested of the respondent. The one-page Graduate Orthodontic Program Survey included the definition of practice administration training used in this survey. The program directors were asked to respond to a series of questions based on the current status of their program, and the status three years earlier. The goal was to gather information on recent trends or changes in the area of practice administration training with respect to their particular program. The questions included the format of the practice administration training, the amount of training and topics included in that training. Program directors were also asked their opinions concerning the major obstacles to the inclusion of practice administration training in their own graduate orthodontic program. Several open-ended questions provided a place

for individual comments and concerns. A blank copy of the Graduate Orthodontic Program Survey can be found in Appendix A.

#### **4.1.2 Survey of Recent Graduates**

In an effort to maximize the response rate, the survey sent to recent graduate orthodontic program graduates was kept as brief as possible. The two-sided Recent Graduate Survey included the definition of practice administration training being used in this survey. Minimal demographic information was asked of those surveyed, in order to maintain the anonymity of the respondents. This was done at the suggestion of the Institutional Review Board Support Office at OHSU (IRB#7075-exempt, see Appendix E). The graduates surveyed were asked the same questions as the program directors concerning the format of practice administration training, the amount of training and the topics included in that training. Additional questions characterized the types of outside sources providing training during their residency. Respondents were asked to compare their educational clinical experience with that of private practice, and to report what practice administration training materials were made available to them following graduation. Steps taken to acquire practice administration training while in years of private practice were also characterized. Like the educators, the recent graduates were asked their opinions concerning the major obstacles to the inclusion of practice administration training in graduate orthodontics programs at the time of their residency. Several open-ended questions provided a place for comments and concerns. A blank copy of the Recent Graduate Survey can be found in Appendix B.

#### **4.2 Survey Construction and Scoring**

The surveys were created on IBM compatible computers using Microsoft Excel 97®. The two-page Recent Graduate Survey was printed double-sided on a single sheet. Each mailing included the single sheet survey, cover letter and reply envelope. Only the cover letter and outer envelope were individually addressed. All surveys and business reply envelopes for each group were

identical and indistinguishable. The majority of the questions required respondents only to check boxes, while several open-ended questions allowed for written responses. As the surveys were received, they were opened, the envelope discarded and the survey sequentially numbered. Each survey was scored manually and entered into a database, using Microsoft Excel 97®. The spreadsheet was designed to allow the inclusion of written comments. Any answers left blank were not scored. No assumptions were made and no interpretations of hard to read choices were presumed or counted in the final data set. Once entered, descriptive statistics were performed on the data to allow reporting consistent with the methods most frequently used in educational survey literature (see Sections 2.1 through 2.4). The statistical analysis, development of tables, and development of figures were all completed using Microsoft Excel 97®.

### **4.3 Survey Recipients**

Graduate Orthodontic Program Surveys were prepared and mailed to the directors of each postdoctoral orthodontic program in the United States, as listed in the American Dental Education Association (ADEA) annual directory. Each of the forty-seven program directors received one survey with a cover letter and business reply envelope. The Recent Graduate Survey was mailed to the primary offices of 1999 and 2000 graduates listed in the American Association of Orthodontists (AAO) annual directory. 397 Recent Graduate Surveys were distributed. Each envelope contained a cover letter, a survey and a business reply envelope. Bulk mail pre-sorted/pre-printed envelopes were used in conjunction with pre-printed no-postage-necessary business reply envelopes. All responses were removed from the return envelopes, and the envelopes discarded prior to scoring in order to maintain anonymity.

### **4.4 Handling of the Returned Surveys**

Following separation of the surveys from their return envelopes, each survey was inspected, sequentially numbered, scored and entered into a database.



The sequential numbering allowed for proofing of the database to eliminate any human error in entering responses. Outside this purpose, the sequential numbering had no significance. The returned surveys were maintained in lock storage, and all electronic data was stored in locked files.

## 5.0 Results

### 5.1 Surveys of Graduate Orthodontic Programs

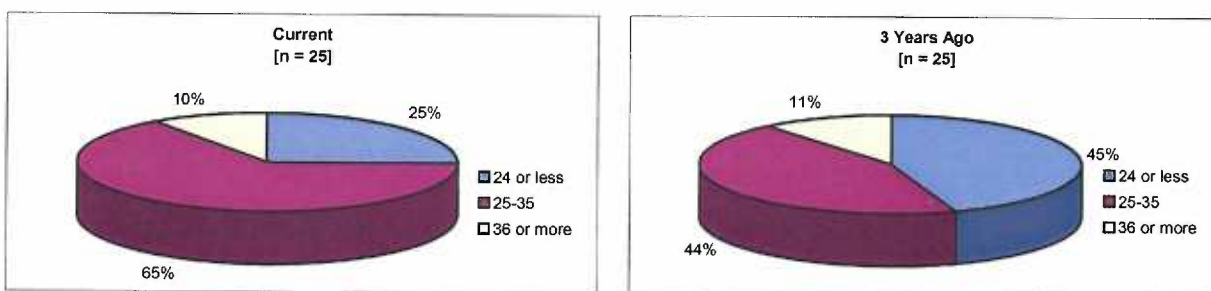
The graduate orthodontic program survey was sent to the 47 graduate orthodontic program directors listed in the ADEA annual directory. The first response was received ten days after the initial mailing. Twenty-five programs completed and returned the survey prior to the self-imposed deadline. The response rate was 53%. Complete tables of the results for this survey can be found in Appendix C.

#### 5.1.1 Length of Program

Respondents were asked to provide the length of their program in months, both currently and three years ago. The mean current length was 30 months, with a standard deviation of 4.7 months, a mode of 24 and a range of 24 to 36.

Three years ago, the mean length was 29 months, with a standard deviation of 5.2 months, a mode of 24 and a range of 24 to 36. Figure 1 displays program length information for this survey.

**Figure 1: Program Length as Reported by Program Directors**



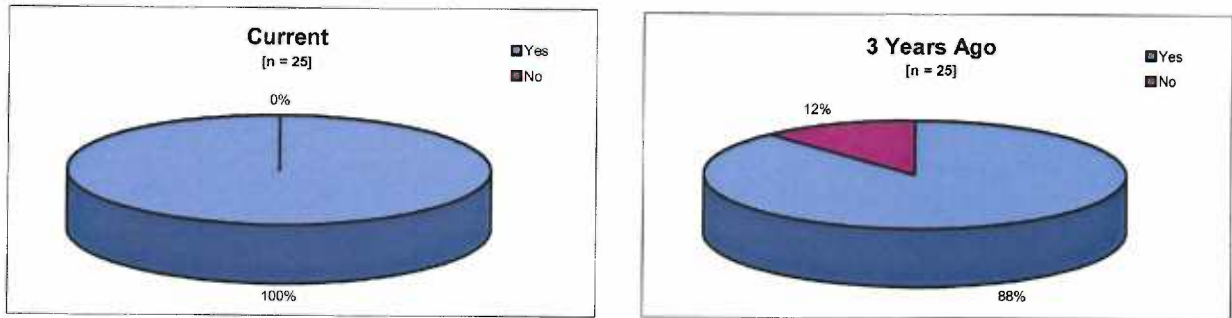
#### 5.1.2 Inclusion of Practice Administration Training

Respondents were asked to answer each question in this section of the survey with regard to their current program, and their program three years ago. Of the 25 surveys received, 25 respondents replied to the questions in this section.

The first question asked if residents in the program received practice administration training. Figure 2 presents the results. All of those surveyed

currently have practice administration training available in their departments. Three years ago, 12% of responding departments had no practice administration training available to residents.

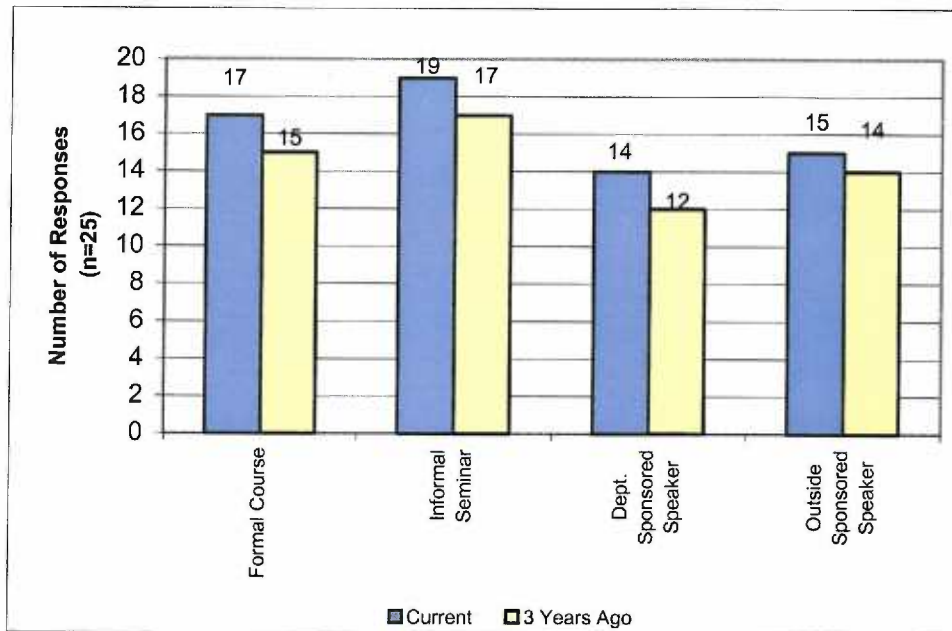
**Figure 2: Programs Providing Practice Administration Training as Reported by Program Directors**



The second question asked the respondent to select the format of practice administration training provided within the program. Multiple answers were possible for this item, including formal coursework, informal seminars given by faculty, department sponsored speakers, and outside sponsored speakers. Respondents were asked to check all that apply. Results of this item are shown in Figure 3. All formats showed increased use over the last three years.

Respondents were then asked to quantify the number of hours of practice administration training residents received in their respective program. The mean number of hours of practice administration training for current programs (n=20) was  $26 \pm 16.3$  hours.

**Figure 3: Formats of Practice Administration Training Reported by Program Directors**

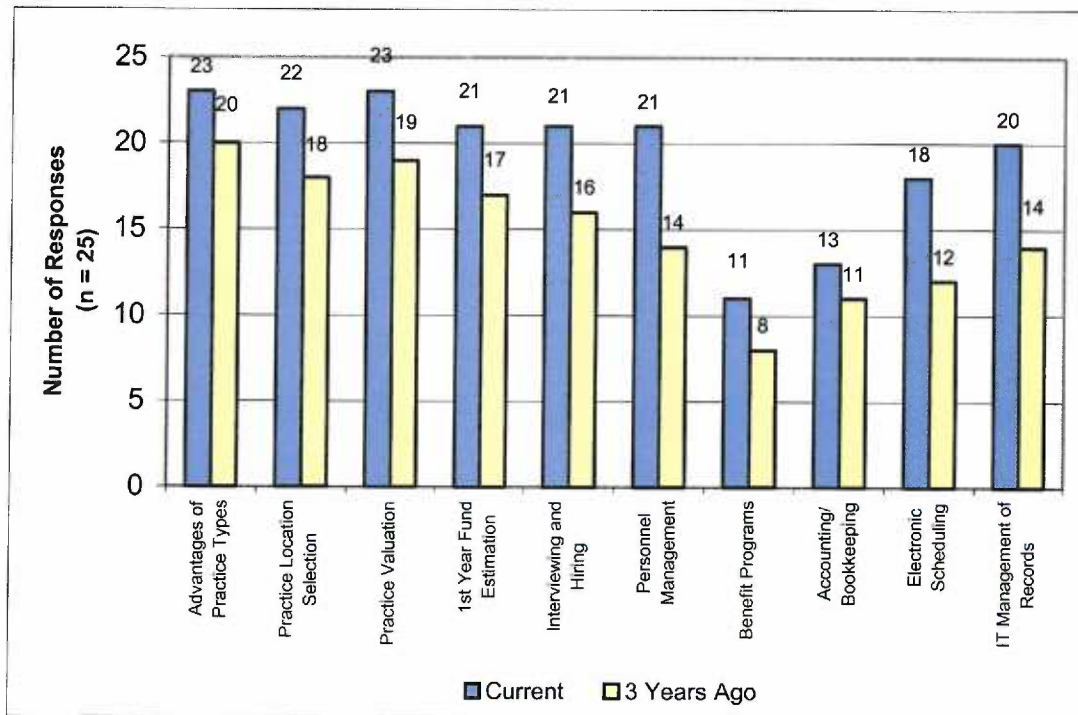


### 5.1.3 Topics Included in Practice Administration Training

For this section, respondents were asked to check each topic which was addressed during their program’s practice administration training. Ten topics were available from which the respondents could select. These topics were chosen based on other authors findings and recommendations.<sup>1,4,5,6,26</sup>

Respondents answered this question based on their current program and that of three years prior. Figure 4 presents the results concerning topics included in practice administration training. Results indicate that more topics are being covered currently than three years ago.

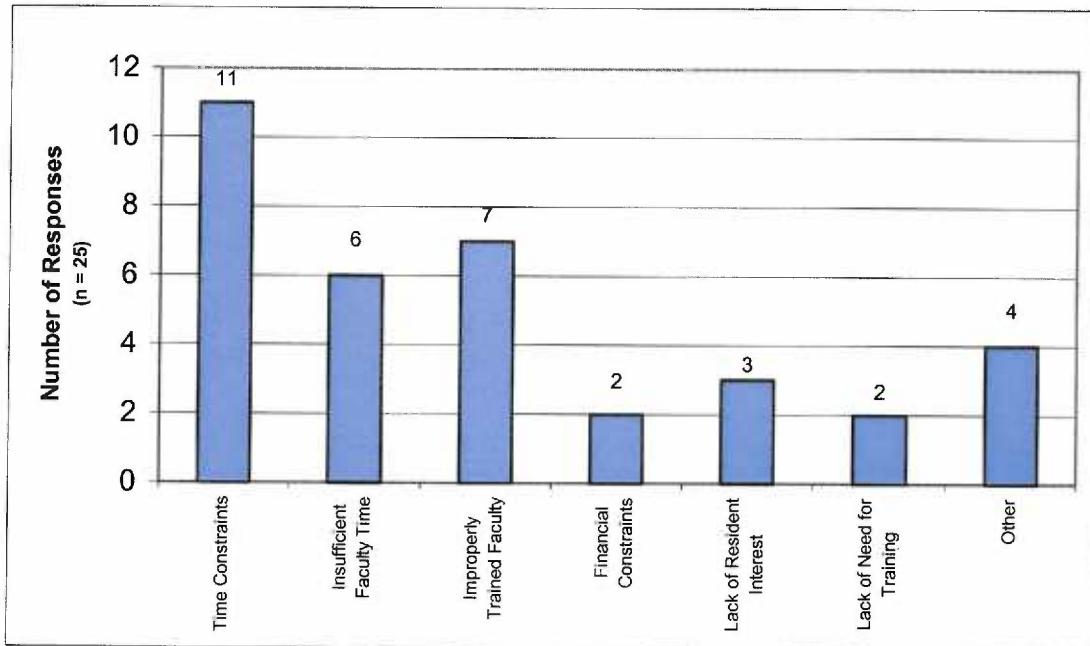
**Figure 4: Topics Included in Practice Administration Training as Reported by Program Directors**



#### 5.1.4 Obstacles to the Inclusion of Practice Administration Training In Graduate Orthodontic Programs

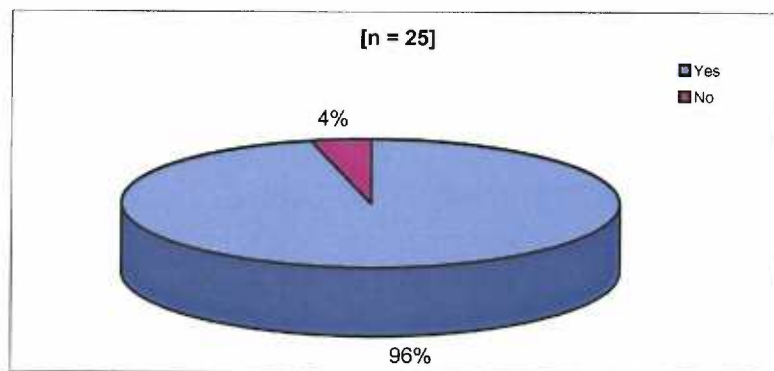
Several possible obstacles to the inclusion of practice administration training in graduate orthodontic programs suggested in the literature were listed for selection in this section. Space was provided for respondents to suggest other obstacles. Figure 5 presents the results concerning those obstacles listed on the survey. Other suggested obstacles included a “lack of available teaching materials,” “diversity of opinion as to effectiveness,” and a “lack of relevancy of the subject matter until needed.”

**Figure 5: Obstacles to the Inclusion of Practice Administration Training in Graduate Orthodontic Programs as Reported by Program Directors**



The respondents were asked if they felt that practice administration training should be a part of graduate orthodontic programs. As indicated by Figure 6, 96% felt practice administration training should be included.

**Figure 6: Program Directors Feeling That Practice Administration Training Should be a Part of Graduate Orthodontic Programs**



## 5.2 Survey of Recent Graduates

A total of 397 Recent Graduate Surveys were distributed among 1999 and 2000 graduates of US graduate orthodontic programs listed in the AAO annual

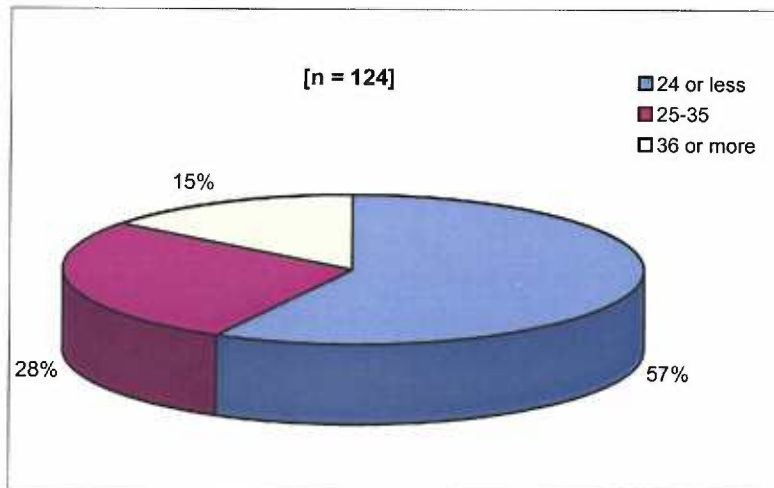


directory. Pre-sorted bulk mail was used via OHSU campus mail services and the USPS. The first response was received six days after the initial mailing. 124 (31%) of recent graduates completed and returned the survey prior to the self-imposed deadline. Complete tables of the results for this survey can be found in Appendix D.

### 5.2.1 Graduate Program and Practice Arrangement Information

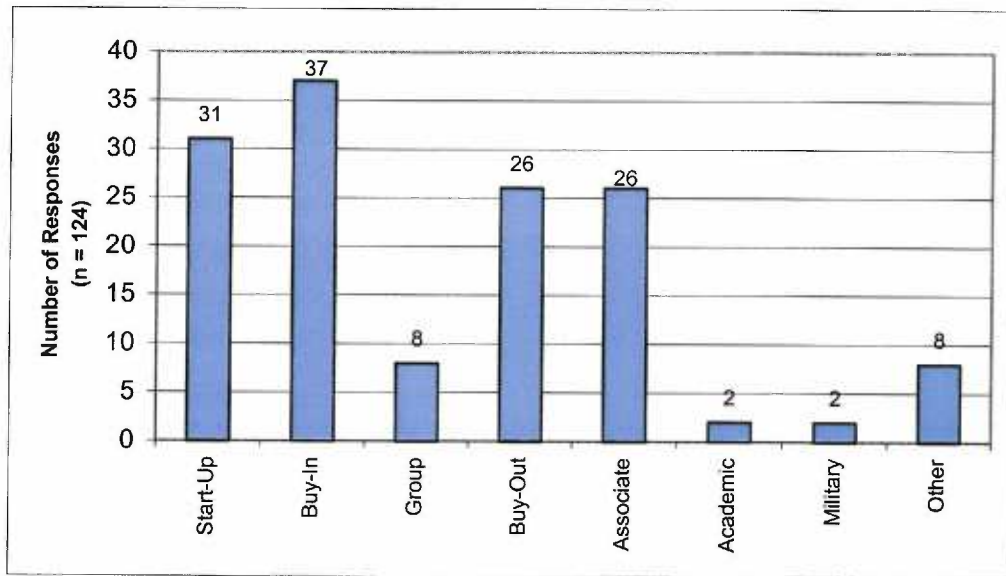
Recent graduates were questioned generally about their dental demographic information. Of those responding, 57% were 1999 graduates and 63% were 2000 graduates. Three respondents did not provide their year of graduation. Respondents indicated the length of their postgraduate program in months. The average program length was 27 months with a standard deviation of 4.8 months a mode of 24, and a range of 20 to 39 months. Figure 7 graphically displays the response with respect to respondents' program length.

**Figure 7: Program Length in Months as Reported by Recent Graduates**



Survey recipients were asked to describe their practice arrangement following graduation. The majority, 76%, selected start-up, buy-in, or buy-out. Figure 8 displays these results. Several respondents indicated they were involved in more than one practice, and selected more than one option as a result. In these cases, both selections were included. The statistical analysis is represented as such in Figure 8.

**Figure 8: Practice Arrangements of Recent Graduates**



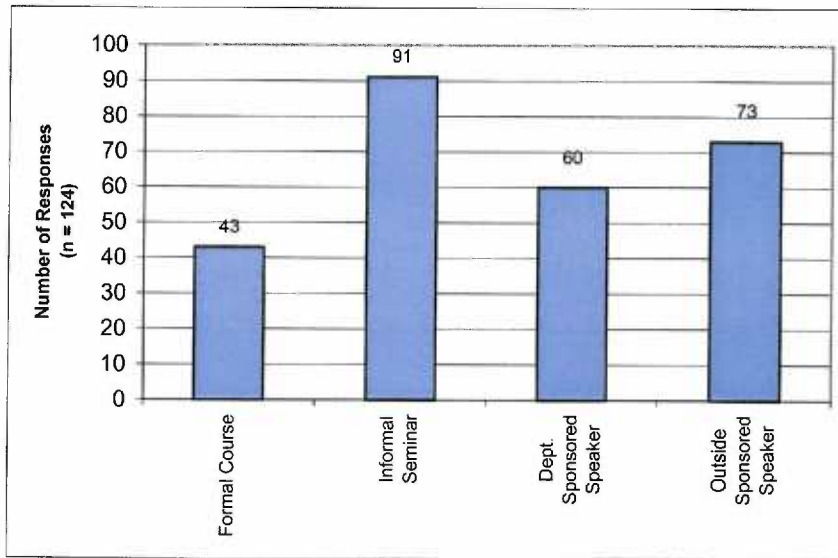
### **5.2.2 Practice Administration Training in Graduate Programs**

The first question in this section asked whether or not the recent graduates had received practice administration training during their postgraduate orthodontic training. The majority, 108 out of 123 (88%), responded yes.

Respondents were then asked to characterize the format of the practice administration training they received through their graduate orthodontic program. Multiple answers were possible for this section including formal coursework, informal seminars given by faculty, department sponsored speakers, and outside sponsored speakers. They were asked to select all that apply. The results are presented in Figure 9.

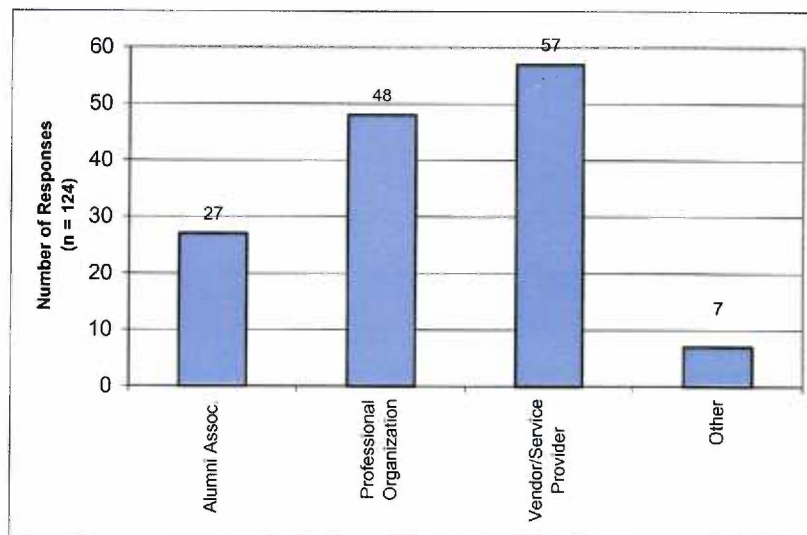


**Figure 9: Formats of Practice Administration Training as Reported by Recent Graduates**



For those who indicated a portion of their training consisted of a seminar or speaker sponsored by an outside source, the type of source was also recorded. Once again, respondents were asked to check all that apply. Figure 10 presents the results collected with regard to outside sources of practice administration training.

**Figure 10: Outside Sources of Practice Administration Training as Reported by Recent Graduates**



To complete this section, respondents were asked to quantify the number of hours spent on formal practice administration coursework during their graduate orthodontic program. Only 68 of the 124 respondents answered this question. The mean number of hours of training was 20, with a standard deviation of 24.3 and a range of 0 to 120 hours. This large variation is most likely the result of varying interpretations of this item.

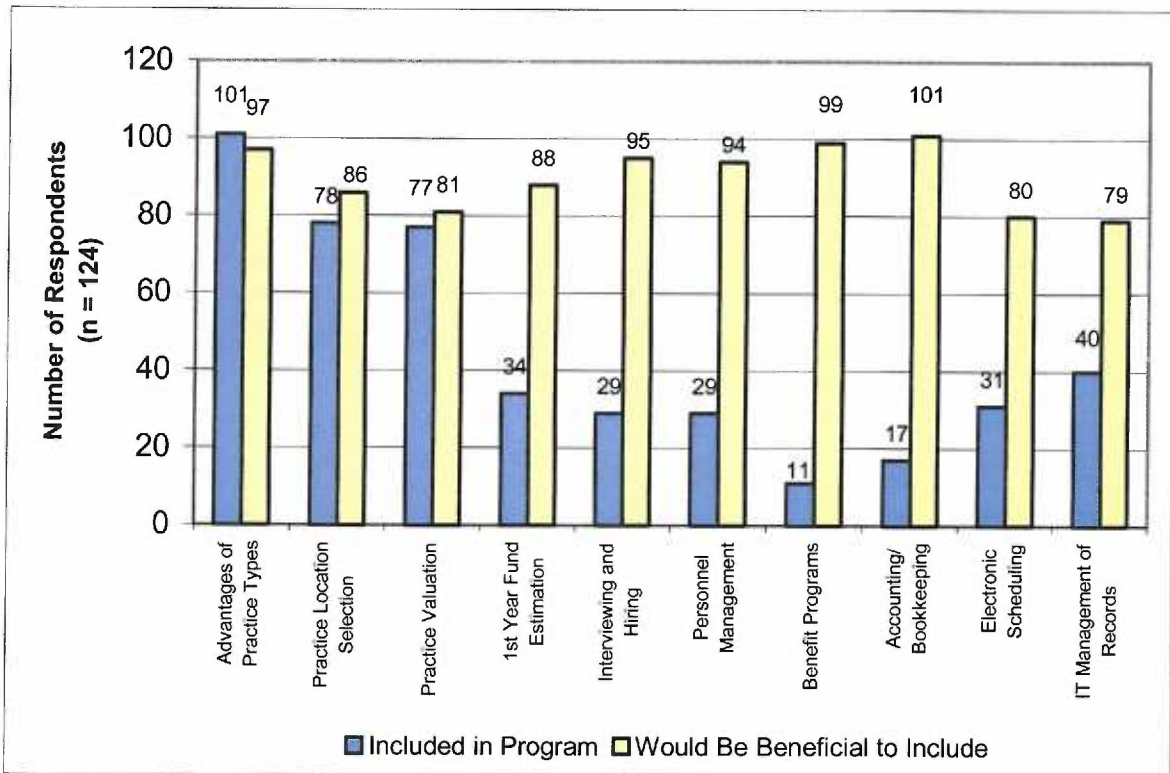
### **5.2.3 Topics Included and Recommended for Inclusion in Practice Administration Training**

For this section, respondents were asked to check each topic that was addressed during the practice administration training provided during their graduate orthodontic program. Ten topics were available from which the respondents could select. These topics were selected for inclusion in the survey based on other authors findings and recommendations.<sup>1,4,5,6,26</sup> A second set of check boxes were provided for the respondents to indicate those areas they felt would be beneficial to include in a practice administration curriculum. All topics were covered by at least one graduate orthodontic program. The results of this section are presented in Figure 11.

### **5.2.4 Recent Graduates Level of Preparedness for Private Practice**

Several items attempted to address the graduates' feeling of preparedness to enter private practice following graduation. Respondents were asked to mark yes or no with respect to specific items which may have aided in the transition from graduate orthodontic programs to private practice. 66% of respondents received reference materials (n=123) to aid in their transition. 61% of respondents felt that the clinical environment was not similar to that of private practice (n=122). 62% were not provided additional training by their graduate orthodontic program regarding private practice (n=93). Table I indicates the responses to those items comparing private practice to the clinical experience during their training.

**Figure 11: Topics Included and Recommended for Inclusion as Reported by Recent Graduates**

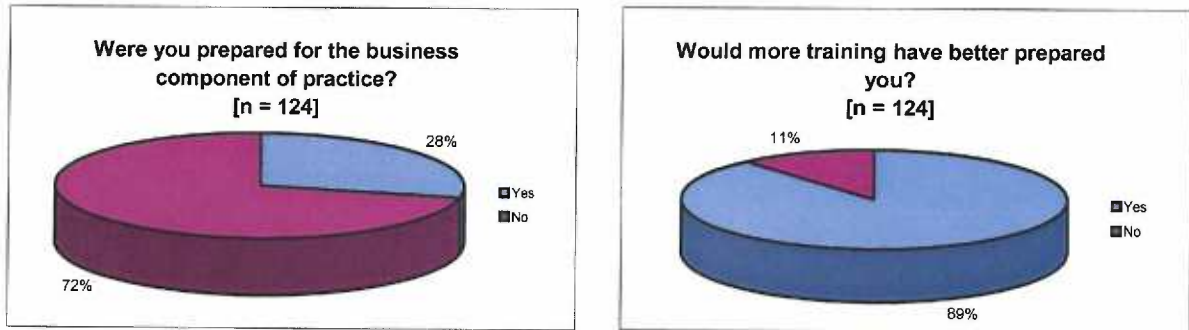


**Table 1: Preparedness for Private Practice as Reported by Recent Graduates**

	Number of Respondents (n)	Yes	No
Reference Materials Provided for After Graduation	123	66%	34%
Residency Clinical Environment Similar to Private Practice	122	39%	61%
Program Provided Additional Training about Private Practice	93	38%	62%

Respondents were asked directly if they felt prepared for private practice after graduation, and if more training could have better prepared them. As shown in Figure 12, only 28% felt they were prepared while 89% indicated more training would have better prepared them.

**Figure 12: Preparedness for Private Practice as Reported by Recent Graduates**

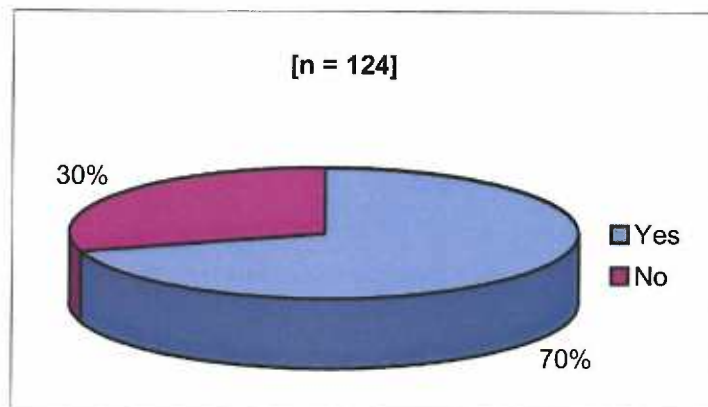


Recent graduates were also asked to provide their recommendations for bridging the gap between the educational clinical experience and the realities of private practice. These comments are included in the Discussion section (Section 6.0).

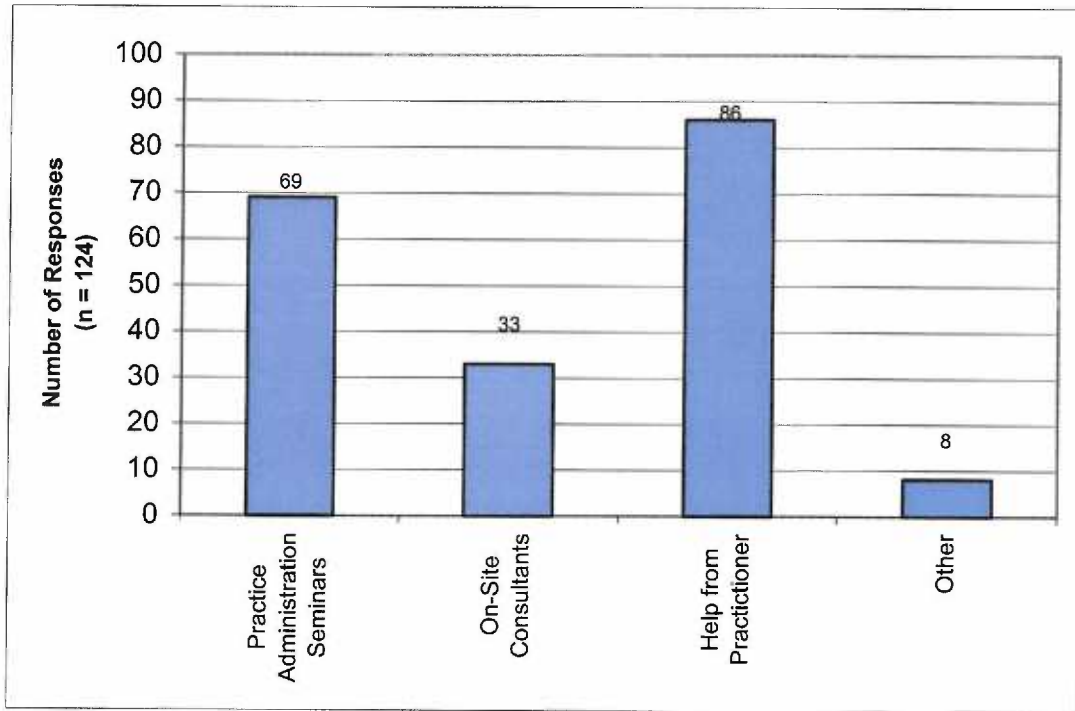
### 5.2.5 Practice Administration Training After Graduation

This section addressed the use of practice administration training by recent graduates in the years since their graduation. Figure 13 indicates that 70% of respondents have sought additional practice administration training since graduating. Figure 14 presents the forms of practice administration training used by the respondents. Multiple answers were permitted in this portion and respondents were asked to check all that apply.

**Figure 13: Recent Graduates Seeking Practice Administration Training After Graduation**



**Figure 14: Forms of Practice Administration Training Used After Graduation by Recent Graduates**



An attempt was made to quantify the cost of obtaining such training during the years after graduation. Sixty-three of 124 respondents answered this question; therefore, the standard deviation is somewhat high for this data set. Table II displays the results from this item.

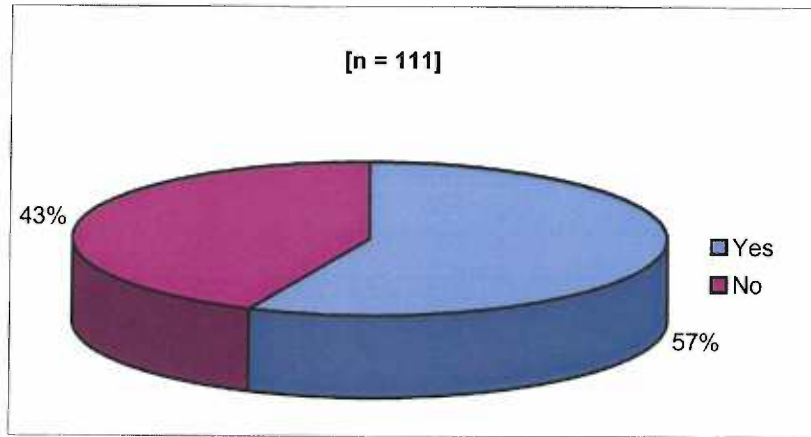
**Table II: Costs of Practice Administration Training as Reported by Recent Graduates**

	Maximum Cost	Minimum Cost	Average Cost	Standard Deviation
First Year of Practice	\$ 40,000	\$ 0	\$ 4,151	\$ 8,180
Second Year of Practice	\$ 30,000	\$ 0	\$ 4,422	\$ 5,196
Third Year of Practice	\$ 35,000	\$ 0	\$ 4,422	\$ 7,000

Respondents were then asked if they felt that additional practice administration training during their graduate program could have reduced the need for and cost of additional training. Figure 15 indicates that 57% felt this was the case.

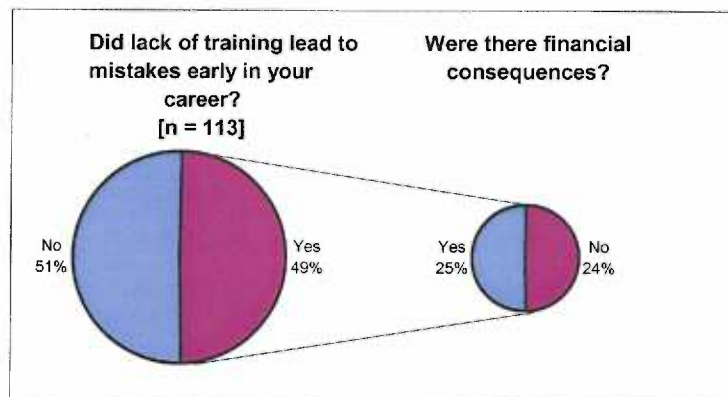


**Figure 15: Recent Graduates Stating More Training During Program Would Lead to Reduced Need and Cost of Training Following Graduation**



Respondents were asked if reduced practice administration training in their graduate program led to mistakes early in their career. Those who responded affirmatively were asked if there were financial consequences to these mistakes. Figure 16 indicates that a slight majority of respondents did not feel that a lack of training had led to mistakes during the first years of practice. Of those who felt their lack of training led to mistakes, 51% felt there were significant financial consequences to these mistakes. Therefore, approximately 25% of respondents felt their lack of practice administration training lead to a financially significant mistake.

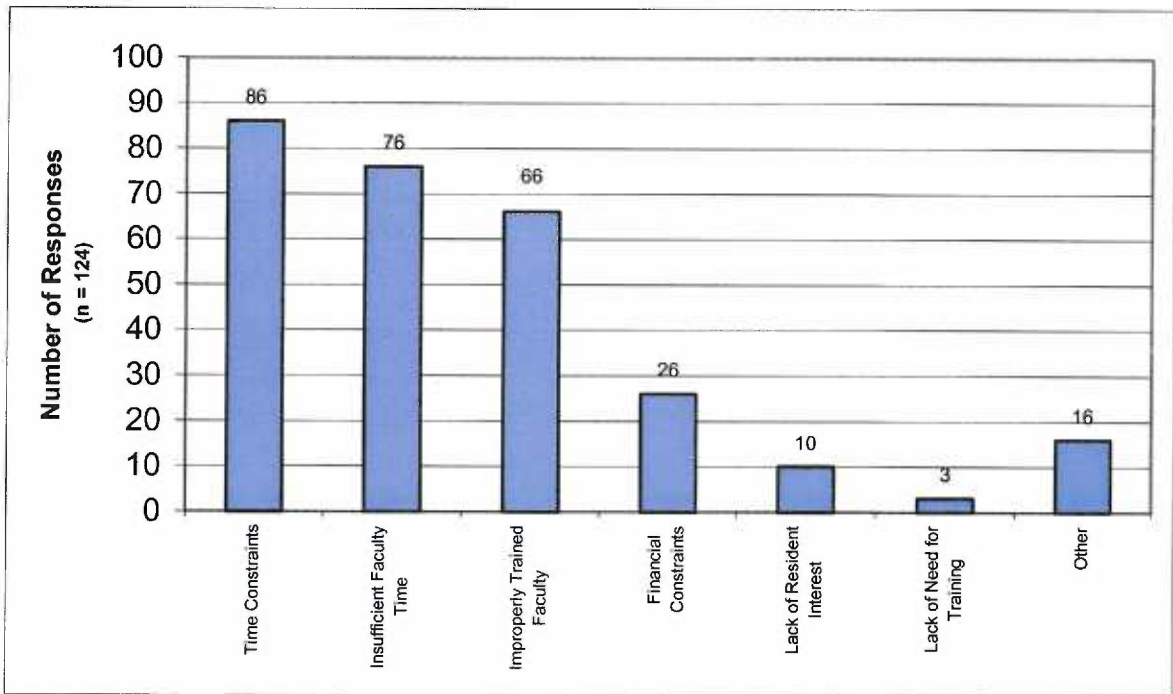
**Figure 16: Has a Lack of Training Led to Mistakes Early in Your Career, and Have Their Been Financial Consequences? (as reported by Recent Graduates)**



### 5.2.6 Obstacles to the Inclusion of Practice Administration Training In Graduate Orthodontic Programs

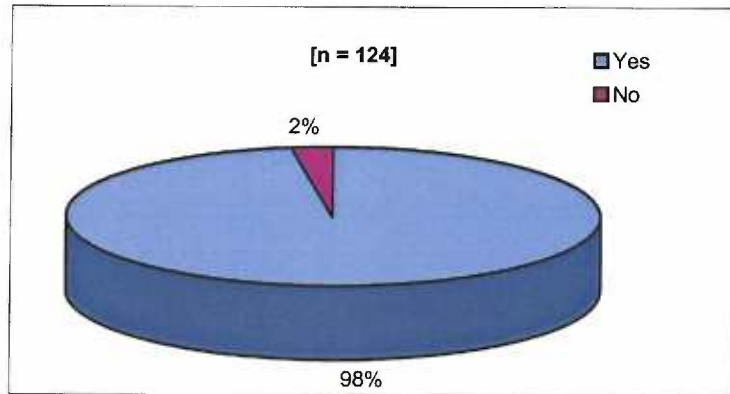
Respondents were asked to select possible obstacles to the inclusion of practice administration training in their respective graduate orthodontic program. They were asked to check all that applied. Several possible obstacles to the inclusion of practice administration training in graduate orthodontic programs suggested in the literature were listed for this item. Respondents were asked to check all that apply. Additionally, space was provided for respondents to suggest other obstacles not listed. Figure 17 presents the results concerning the listed items.

**Figure 17: Obstacles to the Inclusion of Practice Administration Training In Graduate Orthodontic Programs as Reported by Recent Graduates**



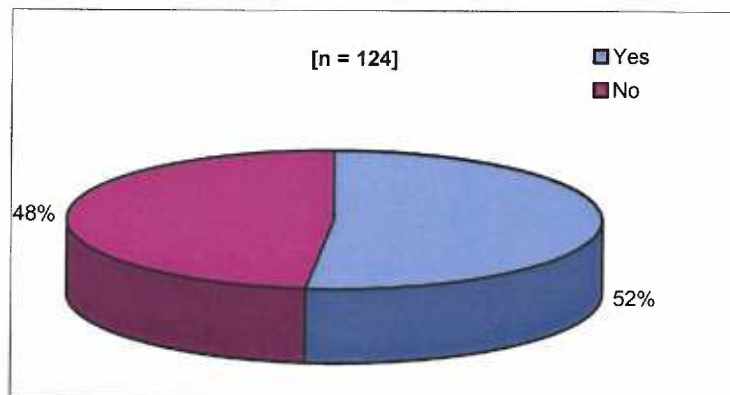
The respondents were asked if they felt practice administration training should be a part of graduate orthodontic programs. As indicated by Figure 18, 98% felt practice administration training should be included as part of graduate orthodontic programs.

**Figure 18: Recent Graduates Stating That Practice Administration Training Should be a Part of Graduate Orthodontic Programs**



When asked if the inclusion of practice administration training would play a role in their selection of a graduate orthodontic program, based on their current knowledge, 52% stated it would, as shown in Figure 19.

**Figure 19: Percentage of Recent Graduates Stating That Inclusion of Practice Administration Training Would Affect Their Graduate Orthodontic Program Selection**





## **6.0 Discussion**

This type of study yields large amounts of data, providing a myriad of comparisons and conclusions concerning the subject matter. Having two sets of surveys, as this study did, allow for exploration of the topic of practice administration training in graduate orthodontic programs from two perspectives. The goal in this case was to compare and contrast the perceptions of program directors and recent graduates concerning the practice administration training experience provided by graduate orthodontic programs.

Response rates for the survey were not as high as other published reports. It is possible that the pre-printed envelopes required by the USPS caused respondents to view the packet as junk-mail, and discard it before opening. Also, the reliability of bulk-mail has been questioned by other authors with the ability to track their respondents.<sup>34</sup> The comments by those who did respond appeared to indicate enthusiasm about the topic. It is evident that many of the respondents have strong feelings concerning practice administration training.

### **6.1 Recent Trends Based on Survey Responses**

Recent trends in the educational community have been towards longer graduate orthodontic programs. The results of this study confirm this trend. Based on the responses of program directors, three years ago 45% of programs were 24 months or shorter (currently 25%), and only 44% were between 24 and 36 months (currently 65%). The number of programs 36 months or longer has stayed relatively consistent at around 10% (Figure 1). With this increase in program duration, it is possible that additional time for the implementation of a practice administration curriculum will be available.

According to the survey results, more programs are now providing practice administration training. All of the programs indicated that their residents currently receive practice administration training, compared with 92% three years ago.

Based on the responses, programs are using each of the formats more currently than three years ago (Figure 3). Currently the most commonly used format is informal seminars with faculty. All the topics included on this survey were taught by more programs currently than three years ago (Figure 4). The most frequently included topics were advantages of various practice types, how to select a practice location and how to evaluate a practice for sale. These represent the practical, short-term needs of many orthodontic graduates. The least frequently included topic was management of employee benefit programs.

When compared to Keith and Proffit's 1994 values, the current study's data for new graduates' practice arrangement seem to indicate a trend away from associateships and toward practice ownership (Figure 8). In 1994, 41% of respondents indicated associateship as their career plan, while only 21% so indicated in the present study. Conversely, while only 43% of respondents planned to practice solo or as a partner in 1994, the current data indicates over 76% fall into these categories.<sup>32</sup> This trend over the last several years toward practice ownership for new orthodontic graduates underscores the need for comprehensive practice administration training.

## **6.2 Recent Graduate Survey Responses**

Several groups of questions were posed only to the recent graduates. These questions were intended to provide some description of their practice experience since graduation. Only 39% of the respondents felt their clinical experience during their graduate orthodontic training was similar to that of private practice (Table I). 72% of graduates felt they weren't prepared for the business component of private practice and 89% felt that more practice administration training would have better prepared them for private practice. These statistics seem to contradict the common sentiment that practice administration can only be taught through experience. Clearly these graduates would have preferred more practice administration training. These results are similar to those published by Donnelly three decades ago, when 92% of dental school graduates felt they would gain confidence if they had more courses in

practice administration.<sup>4</sup> When asked, based on their current knowledge base, if the inclusion of a practice administration curriculum would affect their choice of graduate orthodontic programs, 52% of respondents said yes (Figure 19). With increasing competition among programs for the most highly qualified applicants, perhaps this value is significant in the eyes of program directors.

The current study's recent graduate respondents reported that 70% had sought practice administration training following graduation (Figure 13). Most of this training came in the form of assistance from a more experienced practitioner and practice administration seminars (Figure 14). With only approximately half of the respondents providing information regarding the cost of this training, the data must be viewed with some skepticism (Table II). Nonetheless, several practitioners indicated costs in the tens of thousands of dollars. Perhaps the mere fact that some practitioners pay these fees indicates their need for additional practice administration training during their education.

Beyond the cost of obtaining practice administration training after graduation, 25% of the respondents indicated that they had made mistakes early in their career due to a lack of practice administration knowledge, and that there had been significant financial consequences for these mistakes (Figure 16). In considering the debt load of graduates reported by other authors, the consequences of this lack of knowledge could be catastrophic in the early years of an orthodontic career.

### **6.3 Comparisons of Graduate Program and Recent Graduate Responses**

The recent graduates to whom the survey was sent graduated two to three years prior to the current study (1999-2000). Therefore, when comparing the responses of the recent graduates to those of the program directors, the directors responses concerning the program three years ago are likely to be more applicable. For example, 88% of recent graduate respondents stated they had received practice administration training during their graduate

program. According to the program directors, 88% of programs provided this type of training three years ago. These comparable values indicate some level of agreement between the two groups. When examining practice administration training format, program directors indicated that all four formats were nearly equally utilized, while recent graduates indicated more common use of informal seminars with faculty and speakers sponsored by outside sources (Figures 3 and 9 respectively). These sources were most often vendors / service providers or professional organizations.

Program directors seem to have a more optimistic view of the topics covered in practice administration training. While over 80% of the programs reported inclusion of 7 of the 10 topics, only two topics were reported as included by over 80% of recent graduates: advantages of various practice types and accounting/bookkeeping (Figures 4 and 11 respectively). Only 8% of graduates reported the inclusion of management of employee benefit programs, yet 44% of the programs reported its inclusion. Unfortunately, every topic was reported as included by a greater percentage of programs than recent graduates. It seems some discrepancy exists between those areas program directors feel are being covered, and those recent graduates feel are being covered.

In contrast, the two groups had similar opinions concerning the obstacles to the inclusion of practice administration training in graduate orthodontic programs. The most frequently selected items for both groups were time constraints, insufficient faculty time and improperly trained faculty. Interestingly, while over 20% of the recent graduates thought departmental financial constraints were a major obstacle, only two program directors felt the same (Figures 17 and 5 respectively). Despite this, the vast majority of both groups felt that practice administration training should be a part of graduate orthodontic programs (96% of program directors, 98% of recent graduates).

## 6.4 Comments and Answers to Open-Ended Questions

Several program directors included comments on their surveys. Most were positive, encouraging the formalization of the practice administration training process and offering suggestions from their experiences. Several mentioned office visits and the importance of incorporating multiple viewpoints into practice administration curricula, similar to the suggestions of Sinclair and Grady.<sup>1</sup> Others expressed the need to better prepare residents for the “insurance company invasion in cost containment,” mirroring the concerns of several authors.<sup>1,4,5,31</sup> A couple stated that practice administration training can really only occur through the experience of practicing, thus its role in graduate orthodontic programs should be limited.

Several of the recent graduates reiterated this same point on their surveys. Many said they had visited offices, but didn’t know what to ask at the time. This seems to indicate the need for a structured format set up by experienced practitioners. Other recent graduates felt that sufficient resources existed, but that most residents failed to take advantage of these resources. Most who commented mentioned that the learning process was ongoing, and that the greater the initial knowledge base at graduation, the better off one was. It seemed that many of the recent graduates had found more experienced practitioners to be mentors, and had found this avenue to be the most productive after graduation. Perhaps this gives some indication as to where programs should look for practice administration training facilitators.

## **7.0 Limitations**

Survey-based research suffers from several limitations, as does this study. Self-reported data may or may not be accurate, particularly when information concerning the past is gathered. Recent graduates may have had specific experiences in private practice which have altered their perception of their education. Program directors may not be completely aware of all practice administration training that occurs with other faculty members, and may not recall the precise status of the program three years ago.

The results could also be adversely affected by the portion of survey recipients who chose not to respond. While both programs and recent graduates were surveyed nation-wide, comparisons between the two groups assume that the responding graduates attended the responding programs. This may not necessarily be the case, and the anonymity of the survey prevents evaluation of this relationship.

## 8.0 Conclusions

This study confirms that both program directors and recent graduates feel that practice administration training should be a part of graduate orthodontic training. It appears that more orthodontic graduates are entering into ownership positions and that increased practice administration training could be of benefit. Nearly three-quarters of graduates felt unprepared for private practice, and nearly all felt that more practice administration training would have been beneficial. Additionally, the majority of graduates seek additional practice administration training after graduation. All of these indicators point to the need for more practice administration training during graduate programs. While all programs report providing practice administration training, program directors seem to think more topics are covered than do the recent graduates of the programs. It may be necessary for directors to reevaluate the way in which the topics are covered, and to look for ways to confirm that knowledge is being conveyed to residents effectively. Perhaps by structuring the training into formal coursework, these goals could better be reached.

There is no doubt that obstacles exist to the implementation of practice administration training in graduate orthodontic programs. Program directors and recent graduates recognize the same obstacles to this implementation. Based on respondents' comments, it seems experienced practitioners are among the recent graduates best resources. The results of this study suggest that a formal, structured practice administration training program, designed and implemented by experienced private practitioners could provide the best knowledge base to residents attempting a smooth transition into private practice.

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## **APPENDIX A**

### **Graduate Orthodontic Program Survey**

## **APPENDIX B**

### Recent Graduate Survey

## Definition of Practice Administration Training

*(for purposes of this survey)*

Training related to the body of knowledge that prepares students to understand and utilize economic, marketing, financial, sociological, technological, legal and ethical perspectives to manage an orthodontic practice.

In what year did you complete your graduate orthodontic training? \_\_\_\_\_

What was the length of your program? \_\_\_\_\_ Months

How would you describe your career path following graduation?

- |   |  |                                       |
|---|--|---------------------------------------|
| <input type="checkbox"/> Practice Start-Up  | <input type="checkbox"/> Immediate Buy-Out | <input type="checkbox"/> Military     |
| <input type="checkbox"/> Partnership/Buy-In | <input type="checkbox"/> Associateship     | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Group Practice     | <input type="checkbox"/> Academic          |                                       |

Did you receive practice administration training during your postgraduate orthodontic program?

Yes       No

In what format was your practice administration training presented? *(Please check all that apply.)*

- |   |                          |
|---|--------------------------|
| Formal course taught by faculty                   | <input type="checkbox"/> |
| Informal seminars with faculty                    | <input type="checkbox"/> |
| Meeting/Speaker sponsored by department or school | <input type="checkbox"/> |
| Meeting/Speaker sponsored by outside source       | <input type="checkbox"/> |

If part of your practice administration training was sponsored by outside sources, how would you characterize those sources? *(Please check all that apply.)*

- |                           |                          |
|---------------------------|--------------------------|
| Alumni Association        | <input type="checkbox"/> |
| Professional Organization | <input type="checkbox"/> |
| Vendor / Service Provider | <input type="checkbox"/> |
| Other: _____              | <input type="checkbox"/> |

If formal practice administration coursework was included in your program, please indicate the number of hours of instruction. \_\_\_\_\_ Hours

Regardless of format, please indicate which topics were included in your program's practice administration training in the left column. Based on your practice experience, please indicate which topics you believe would have been beneficial to you in the right column. *(Please check all that apply.)*

	Was Included	Would Be Beneficial
Advantages of various types of practice	<input type="checkbox"/>	<input type="checkbox"/>
How to select a practice location	<input type="checkbox"/>	<input type="checkbox"/>
How to evaluate a practice for sale	<input type="checkbox"/>	<input type="checkbox"/>
Means of estimating funds for first year of practice	<input type="checkbox"/>	<input type="checkbox"/>
How to interview, evaluate, and hire personnel	<input type="checkbox"/>	<input type="checkbox"/>
Personnel management techniques and skills	<input type="checkbox"/>	<input type="checkbox"/>
Management of employee benefit programs	<input type="checkbox"/>	<input type="checkbox"/>
Accounting / Bookkeeping principles	<input type="checkbox"/>	<input type="checkbox"/>
Use of electronic scheduling in a multi-chair office	<input type="checkbox"/>	<input type="checkbox"/>
Use of information technology to manage patient records	<input type="checkbox"/>	<input type="checkbox"/>

Did your program provide any reference practice administration materials for use after graduation?  Yes       No

Would you consider your program's clinical environment similar to that of private practice?  Yes       No

If not, did you receive any additional training concerning what to expect from private practice?  Yes       No

Do you have any recommendations on bridging the gap between academic and private clinical environments?

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*Please continue on reverse. Thank you.*

Upon graduation, do you believe you were prepared for the business component of your orthodontic practice?

Yes  No

Do you believe additional practice administration training during your graduate orthodontic program could have better prepared you for the business component of your practice?

Yes  No

Since graduating from your orthodontic program, have you sought out additional practice administration training?

Yes  No

If so, what forms of additional practice administration training have you used? *(Please check all that apply.)*

- Practice administration seminars
- On-site practice consultants
- Assistance of a more experienced practitioner
- Other: \_\_\_\_\_

What would you estimate the annual cost of this practice administration training to be each year you have practiced?

First Year of Practice                    \$ \_\_\_\_\_  
Second Year of Practice                 \$ \_\_\_\_\_  
Third Year of Practice                    \$ \_\_\_\_\_

Do you believe that additional practice administration training in your graduate orthodontic program would have reduced the need for (and cost of) additional training?

Yes  No

Do you feel that not having this practice administration training during your graduate orthodontic program has lead to mistakes in the early years of your career?

Yes  No

If so, do you feel that avoiding those mistakes could have represented a significant financial savings to you?

Yes  No

As early as 1970, published articles began urging the inclusion of practice administration training in dental education. In your opinion, what have been the major obstacles to the inclusion of this material in graduate orthodontic programs? *(Please check all that apply.)*

- Time constraints (insufficient time in the program to allow for addition of classes)
- Insufficient faculty (faculty too busy to create and facilitate additional classes)
- Improperly trained faculty (current faculty not equipped to teach such a classes)
- Financial constraints (cost of additional classes not sustainable)
- Lack of resident interest
- Lack of a need for this type of training
- Other: \_\_\_\_\_
- Other: \_\_\_\_\_

If you were choosing a graduate orthodontic program today, would the inclusion of a practice administration curriculum affect your decision?

Yes  No

Do you feel practice administration training should be a part of graduate orthodontic programs?

Yes  No

Your comments:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Thank you for completing our survey and assisting in our course development!*

## **APPENDIX C**

### Data Tables for Graduate Program Survey



### Data Tables for Graduate Program Survey

Number	Training_Type														Training_Topics_Are_Included									
	Training-NOW	Training-3YA	T_Format_Course-NOW	T_Format_Seminar-NOW	T_Format_Speaker_Dept-NOW	T_Format_Outside-NOW	Course -3YA	Seminar - 3YA	Speaker -3YA	Outside - 3YA	Hours_Instruction-NOW	Hours - 3YA	Length_program-NOW	Length - 3YA	Practice_Type_Are	Practice_Locate_Are	Practice_Eval_Are	Fund_Estimate_Are	Personnel_Are	Management_Are	Benefits_Are	Accounting_Are	Electronic_Schedule_Are	IT_Records_Are
1	1	1	1	1	0	1	1	1	0	1		24	24	1	1	1	1	1	1	1	1			1
2	1	1	1	1		1	1	1		1	16	8	35	35	1	1	1	1	1	1				
3	1	1	1	1		1	1	1		1	10	10	26	26	1	1	1	1					1	1
4	1	1	1	1		1	1	1		1	25	25	36	36	1	1	1	1	1	1	1	1	1	1
5	1	1			1	1				1					1	1	1	1		1		1	1	1
6	1	1	1				1				48	48	30	24	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	20	20	33	33	1	1	1	1	1	1	1	1	1	1
8	1	0	1			1					24		34		1	1	1	1	1	1	1	1	1	1
9	1	1		1				1					35	35	1	1	1	1	1	1				
10	1			1		1										1	1		1	1			1	1
11	1	0	1	1	1						40		27		1	1	1	1	1	1		1		1
12	1	1	1	1	1	1	1	1	1	1	70	40	36	36	1	1	1	1	1	1	1	1	1	1
13	1	1		1	1			1	1	1			26	26	1	1	1	1	1	1	1		1	1
14	1	1	1	1	1	1	1	1	1	1	12	12	24	24	1	1	1	1	1	1		1	1	1
15	1	1		1	1			1	1		4		30	24						1			1	1
16	1	1	1	1		1	1	1		1	20	20			1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	16	16			1	1	1		1				1	1
18	1	1	1	1	1	1	1	1	1	1	42	42	27	24	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1		1	1	1		30	30	24	24	1	1	1	1	1	1	1	1	1	1
20	1	1		1	1	1		1	1	1	19	19	24	24	1	1	1	1				1		
21	1	1	1				1				48	48	35	35	1	1	1	1	1	1			1	1
22	1	1	1				1				17	17			1			1	1			1		
23	1	1			1				1		12	12	24	24	1		1	1	1	1				1
24	1	1	1	1	1	1	1	1	1	1	16	16	27	27	1	1	1	1	1	1	1		1	
25	1	1		1	1			1	1		30	30	34	34	1	1	1		1	1			1	1

1 = yes  
0 = no

### Data Tables for Graduate Program Survey

Number	Training_Topics_Were_Included										Obstacles							Comments:
	Practice_Type_Were	Practice_Locate_Were	Practice_Eval_Were	Fund_Estimate_Were	Personnel_Were	Management_Were	Benefits_Were	Accounting_Were	Electronic_Schedule_Were	IT_Records_Were	Time_Constraints	Insufficient_Faculty	Improperly_Trained	\$_Constraints	Lack_Interest	Lack_Need	Other	
1	1	1	1	1	1					1	1							1
2	1	1	1								1	1						1
3	1	1	1	1					1	1			1					1
4	1	1	1	1	1	1	1	1	1	1								1
5	1	1	1	1		1		1	1	1	1	1	1					1
6	1	1	1	1	1	1	1	1	1	1								
7	1	1	1	1	1	1	1	1	1	1								1
8											1	1	1				1	1
9	1	1	1	1	1	1								1	1			1
10											1							1
11											1							1
12	1	1	1	1	1	1	1	1	1	1								1
13											1	1						1
14	1	1	1	1	1	1		1	1	1				1	1	1		1
15						1		1	1	1	1							1
16	1	1	1	1	1	1	1	1	1	1								1
17	1	1	1		1			1	1									1
18	1	1	1	1	1	1	1	1					1			1		1
19	1	1	1	1	1	1	1	1	1	1								1
20	1	1	1	1				1			1							1
21	1	1	1	1	1	1		1	1	1	1	1						1
22	1			1	1			1			1	1	1					1
23	1		1	1	1					1						1		1
24	1	1	1	1	1	1	1						1					1
25	1	1	1		1	1						1	1		1			1

1 = yes  
0 = no

## **APPENDIX D**

### Data Tables for Recent Graduate Survey

### Data Tables for Recent Graduates Survey

Number	General_Background											Training_Type									
	Year_Complete_99	Year_Complete_00	Length_program	Career_Start-up	Career_Buy-In	Career_Group	Career_Buy-out	Career_Associate	Career_Academic	Career_Military	Career_Other	Training	T_Format_Course	T_Format_Seminar	T_Format_Speaker_Dept	T_Format_Outside	Sponsor_Alumni	Sponsor_Org	Sponsor_Vendor	Sponsor_Other	Hours_Instruction
1	0	1	24				1					1		1					1		
2	0	0	23							1		1		1	1			1			0
3	0	1	24		1							1		1							
4	0	1	24							1		1			1	1		1	1		20
5	0	1	30		1							1		1			1				
6	0	1	24	1								1	1	1	1	1	1		1		40
7	1	0	24				1					1		1	1						
8	0	1	33	1								1	1	1		1			1		10
9	0	1	33	1								1		1	1	1			1		
10	0	1	24				1					0		1		1	1				
11	1	0	24		1	1		1				1		1		1		1	1		
12	0	1	24		1							1		1		1			1		
13	1	0	24				1					1	1	1	1	1	1		1		
14	1	0	24	1								1		1				1			0
15	1	0	36				1	1				1				1	1				
16	1	0	34		1							1	1								
17	0	1	24					1				0		1		1		1	1		0
18	1	0	24				1					0				1		1	1		0
19	0	1	36			1						1		1	1	1		1			
20	0	1	25	1						1		1	1								40
21	1	0	36	1								1	1	1	1	1		1	1		40
22	1	0	23		1							1		1	1						10
23	1	0	24				1					1	1								18
24	1	0	27	1								1	1	1	1						
25	1	0	24	1				1				1	1	1	1	1		1	1		2
26	1	0	24	1								1		1	1	1			1		10
27	0	1	39		1							1	1								80
28	0	1	36				1					1	1	1	1	1			1		20
29	1	0	22		1							1		1							
30	0	1	26				1					1		1							10
31	1	0	26					1				1	1	1							4
32	1	0	24		1			1				1		1	1	1	1	1	1		
33	1	0	27					1				1		1							
34	0	1	33					1				1	1	1		1			1		10
35	1	0	26	1								1		1			1		1		
36	0	1	24	1								1			1		1	1			
37	1	0	24				1					0						1			
38	1	0	34		1							1	1	1							3
39	1	0	24				1					0				1			1		
40	1	0	27	1				1				1		1	1	1		1	1		

1 = yes  
0 = no

### Data Tables for Recent Graduates Survey

Number	General_Background										Training_Type										
	Year_Complete_99	Year_Complete_00	Length_program	Career_Start-up	Career_Buy-In	Career_Group	Career_Buy-out	Career_Associate	Career_Academic	Career_Military	Career_Other	Training	T_Format_Course	T_Format_Seminar	T_Format_Speaker_Dept	T_Format_Outside	Sponsor_Alumni	Sponsor_Org	Sponsor_Vendor	Sponsor_Other	Hours_Instruction
41	1	0	24		1						1	1	1		1		1	1			10
42	1	0	24				1			1	1		1		1		1				
43	0	0	30				1				1			1		1					
44	1	0	36		1						1		1	1							
45	0	1	24	1							1		1	1	1		1	1	1		
46	0	1	24							1	1		1		1			1			
47	0	1	27		1	1					1		1								0
48	0	1	24				1				1	1	1	1	1	1			1		72
49	1	0	36				1				1		1								
50	1	0	23		1						0										
51	1	0	30		1			1			1	1	1	1	1	1	1	1	1		20
52	1	0	24		1						1		1	1					1		
53	1	0	24		1			1			0		1						1		0
54	1	0	24							1	1	1		1		1					72
55	1	0	27	1							1	1	1	1	1				1		25
56	0	0	24		1						0										
57	0	1	36					1			1	1	1		1		1	1			9
58	0	1	34	1							1		1	1	1						
59	1	0	24		1						1		1								
60	1	0	24		1						1		1	1	1		1	1			
61	1	0	24							1	1		1		1		1	1			
62	1	0	36						1		1	1	1	1	1		1	1			20
63	0	1	24							1	1	1									30
64	1	0	26			1					1	1			1		1				6
65	0	1	24	1				1			1	1	1	1	1		1	1	1		20
66	1	0	32				1				1		1		1				1		8
67	1	0	24	1							0										
68	1	0	36				1				1		1								3
69	0	1	24	1		1					1			1	1	1	1				
70	1	0	24					1			0		1	1			1	1			8
71	0	1	23		1						1		1		1		1	1			
72	0	1	36	1										1	1	1	1				0
73	1	0	24					1			1		1		1	1					
74	0	1	24			1					1		1		1		1	1			
75	1	0	24		1						1		1		1	1	1				4.5
76	0	1	20		1						1	1		1	1	1		1			30
77	0	1	25		1						1	1	1		1		1				12.5
78	1	0	30		1						1	1	1	1	1		1	1			17.5
79	1	0	24					1			0										

1 = yes  
0 = no

## Data Tables for Recent Graduates Survey

Number	General_Background										Training_Type										
	Year_Complete_99	Year_Complete_00	Length_program	Career_Start-up	Career_Buy-In	Career_Group	Career_Buy-out	Career_Associate	Career_Academic	Career_Military	Career_Other	Training	T_Format_Course	T_Format_Seminar	T_Format_Speaker_Dept	T_Format_Outside	Sponsor_Alumni	Sponsor_Org	Sponsor_Vendor	Sponsor_Other	Hours_Instruction
80	0	1	24				1				1	1	1	1				1			
81	0	1	24	1							1	1		1				1			
82	0	1	24					1			1	1		1				1			20
83	0	1	27				1				1	1		1			1	1			
84	0	1	24	1							1	1	1	1	1					1	12
85	1	0	38					1			1		1								
86	0	1	24		1						1		1		1		1				10
87	1	0	32		1						1		1		1		1	1			12
88	0	1	24						1		1		1	1	1		1	1			
89	0	1	36	1							1	1		1							40
90	1	0	24				1				0		1								
91	0	1	34							1	1	1	1	1	1	1					40
92	1	0	24			1					1			1	1	1					
93	0	1	27		1						1	1									35
94	1	0	24				1				1			1	1		1	1			
95	1	0	30	1							0										
96	0	1	36		1						1		1	1	1		1	1			
97	1	0	24					1			1	1	1	1							40
98	1	0	36							1	1	1	1	1	1	1		1			
99	0	1	32		1						1	1									120
100	1	0	24				1				1	1	1	1	1	1	1		1		
101	0	1	24	1							1	1	1		1				1		16
102	1	0	36		1						1	1	1	1	1				1		112
103	1	0	24				1				1	1		1	1	1					40
104	0	0	32		1						1	1									25
105	0	1	27			1					1	1	1	1							12
106	0	1	24	1							1		1		1	1	1	1			40
107	0	1	30	1							1		1								0
108	0	1	24		1						1	1	1								3
109	0	1	22					1			1		1	1							3
110	1	0	21		1						1		1		1	1					
111	1	0	30		1						0		1	1				1	1		20
112	0	0	24				1				1	1	1	1	1		1	1			20
113	1	0	24	1				1			1			1						1	0
114	0	1	27		1						1	1	1	1	1		1				4
115	0	1	24	1							1			1	1				1		15
116	1	0	36				1				1		1		1				1		6
117	1	0	23					1			1		1	1							
118	1	0	24	1							1		1	1	1		1	1			

1 = yes  
0 = no

## Data Tables for Recent Graduates Survey

Number	General_Background										Training_Type										
	Year_Complete_99	Year_Complete_00	Length_program	Career_Start-up	Career_Buy-In	Career_Group	Career_Buy-out	Career_Associate	Career_Academic	Career_Military	Career_Other	Training	T_Format_Course	T_Format_Seminar	T_Format_Speaker_Dept	T_Format_Outside	Sponsor_Alumni	Sponsor_Org	Sponsor_Vendor	Sponsor_Other	Hours_Instruction
119	0	1	36	1				1				1			1			1	1		0
120	1	0	34		1			1				1		1	1			1			7
121	0	1	24	1								1	1	1	1	1	1	1	1		8
122	0	1	24					1				1		1	1	1	1	1	1		15
123	0	1	24					1				0	1		1			1			
124	0	1	24				1					1	1	1	1			1	1		10

1 = yes  
0 = no

### Data Tables for Recent Graduates Survey

Number	Training_Topics_Was_Included										Training_Topics_Would_Benefit									
	Practice_Type_Was	Practice_Locate_Was	Practice_Eval_Was	Fund_Estimate_Was	Personnel_Was	Management_Was	Benefits_Was	Accounting_Was	Electronic_Schedule_Was	IT_Records_Was	Practice_Type_Would	Practice_Locate_Would	Practice_Eval_Would	Fund_Estimate_Would	Personnel_Would	Management_Would	Benefits_Would	Accounting_Would	Electronic_Schedule_Would	IT_Records_Would
1	1										1	1	1	1	1	1	1	1	1	1
2											1	1	1	1	1	1	1	1	1	1
3			1										1	1	1	1	1	1	1	1
4	1	1	1		1	1			1		1	1			1	1				1
5	1	1						1			1	1	1	1	1	1	1	1		1
6	1	1	1	1			1		1		1	1	1	1			1			1
7	1		1								1	1	1	1	1	1	1	1	1	1
8	1	1			1				1		1	1	1	1		1	1	1	1	1
9		1		1	1			1	1		1	1	1	1		1	1	1		
10			1								1	1	1	1	1	1	1	1	1	1
11	1	1	1	1				1	1		1	1	1		1	1	1	1		
12	1	1						1	1		1	1	1	1	1	1	1	1		
13	1	1	1	1							1	1	1		1	1	1	1		
14		1		1				1			1	1	1	1	1	1	1	1	1	1
15	1	1	1								1	1	1	1			1	1		
16	1	1	1								1	1	1	1	1	1	1	1	1	1
17											1	1	1	1	1	1	1	1	1	1
18													1	1		1	1	1		
19	1	1									1	1	1	1	1	1	1	1	1	1
20	1			1							1	1	1	1	1	1		1		
21	1	1	1		1						1	1		1		1	1	1	1	1
22	1	1	1								1	1	1	1	1	1	1	1	1	1
23	1	1	1								1	1	1	1	1	1	1	1	1	1
24	1		1		1	1					1	1	1	1			1	1	1	1
25	1	1	1					1	1		1	1	1	1	1	1	1	1	1	1
26	1		1			1		1	1		1	1		1	1		1	1		
27	1	1		1				1			1		1		1	1	1		1	1
28		1	1		1	1		1	1			1	1	1	1	1	1	1	1	1
29	1										1	1	1	1	1	1	1	1	1	1
30		1	1					1	1			1	1	1	1	1	1	1		
31	1	1	1								1			1	1	1	1	1	1	1
32	1	1	1	1		1		1	1		1				1		1	1		
33	1	1									1	1	1	1	1	1	1	1	1	1
34	1	1	1			1		1	1		1			1	1		1			1
35	1	1	1		1	1		1	1		1			1			1	1		
36	1	1	1						1		1									
37											1	1	1	1	1	1		1		
38	1	1	1	1	1	1		1			1					1			1	1
39												1	1	1	1	1	1			
40	1	1	1		1				1		1			1		1	1	1	1	

1 = yes  
0 = no



### Data Tables for Recent Graduates Survey

Number	Training_Topics_Was_Included										Training_Topics_Would_Benefit									
	Practice_Type_Was	Practice_Locate_Was	Practice_Eval_Was	Fund_Estimate_Was	Personnel_Was	Management_Was	Benefits_Was	Accounting_Was	Electronic_Schedule_Was	IT_Records_Was	Practice_Type_Would	Practice_Locate_Would	Practice_Eval_Would	Fund_Estimate_Would	Personnel_Would	Management_Would	Benefits_Would	Accounting_Would	Electronic_Schedule_Would	IT_Records_Would
41	1				1					1	1	1	1	1		1	1	1	1	1
42	1	1	1	1						1				1	1	1	1	1	1	1
43	1									1		1	1					1		
44	1	1	1					1	1	1	1	1	1	1	1	1	1	1	1	1
45	1		1	1		1		1		1		1	1	1	1		1	1	1	1
46	1									1	1	1	1	1	1	1	1	1	1	1
47	1	1				1		1	1	1	1		1	1		1				
48	1	1	1	1	1	1	1	1	1	1										
49	1	1	1	1						1	1	1	1	1	1	1	1	1	1	1
50																				
51	1	1	1			1	1	1	1	1	1	1	1		1	1	1	1	1	1
52	1	1								1	1	1	1	1	1	1	1	1	1	1
53	1									1	1	1	1	1	1	1	1	1	1	1
54	1	1	1							1	1	1	1	1	1	1	1	1	1	1
55	1		1	1				1	1	1	1			1	1	1	1	1		
56										1	1	1	1	1	1	1	1	1	1	1
57	1	1	1		1	1				1	1									
58	1	1								1	1	1	1	1	1	1	1	1	1	1
59	1	1	1			1														
60	1		1						1	1		1		1	1	1	1	1	1	1
61	1									1	1	1	1	1	1	1	1	1	1	1
62		1	1		1	1				1	1	1	1	1	1	1	1	1	1	1
63	1	1	1	1						1	1			1	1	1	1	1	1	1
64										1	1	1	1	1	1	1	1	1	1	1
65	1	1	1	1						1	1			1	1	1	1	1	1	1
66	1	1								1	1	1	1	1	1	1	1	1	1	1
67										1	1	1	1	1	1	1	1	1	1	1
68	1	1						1		1	1	1	1	1	1	1	1	1	1	1
69	1	1								1	1	1	1	1	1	1	1	1	1	1
70	1									1	1	1	1	1	1	1	1	1	1	1
71	1	1	1	1	1					1	1	1	1	1	1	1	1	1	1	1
72	1	1	1	1						1	1			1	1	1	1	1	1	1
73	1	1						1	1	1	1	1	1	1	1	1	1	1		
74	1		1							1	1		1	1	1	1	1	1	1	1
75			1							1	1		1	1	1	1	1	1	1	1
76	1	1	1		1	1		1	1	1	1	1	1	1	1	1	1	1	1	1
77	1		1	1						1	1	1	1	1	1	1	1	1	1	1
78	1	1	1	1	1					1	1			1	1	1	1	1	1	1
79	1									1	1	1	1	1	1	1	1	1	1	1

1 = yes  
0 = no

## Data Tables for Recent Graduates Survey

Number	Training_Topics_Was_Included									Training_Topics_Would_Benefit										
	Practice_Type_Was	Practice_Locate_Was	Practice_Eval_Was	Fund_Estimate_Was	Personnel_Was	Management_Was	Benefits_Was	Accounting_Was	Electronic_Schedule_Was	IT_Records_Was	Practice_Type_Would	Practice_Locate_Would	Practice_Eval_Would	Fund_Estimate_Would	Personnel_Would	Management_Would	Benefits_Would	Accounting_Would	Electronic_Schedule_Would	IT_Records_Would
80	1	1		1		1			1	1	1	1		1		1	1	1	1	1
81	1	1	1							1	1	1	1	1	1	1	1	1	1	1
82	1	1								1	1	1	1	1	1	1	1	1	1	1
83	1						1		1	1	1	1	1	1	1	1	1	1	1	1
84		1	1	1						1				1	1	1	1	1	1	1
85	1	1	1							1				1	1			1		
86	1		1							1	1	1	1	1	1					
87	1							1	1	1	1			1	1	1				
88	1	1	1			1				1			1					1	1	1
89	1	1	1							1	1	1	1	1	1				1	1
90	1		1							1				1	1			1		
91	1	1	1	1	1	1				1	1	1	1	1						1
92	1	1	1							1	1	1	1	1	1					
93	1	1	1				1			1				1	1	1			1	1
94	1		1		1	1			1	1	1		1		1			1		
95																				
96	1	1	1							1	1	1	1	1	1	1	1	1		
97	1	1	1	1	1					1	1	1	1	1	1	1	1	1	1	1
98	1	1	1	1						1	1	1	1	1	1	1	1	1		1
99	1	1	1		1				1	1	1	1	1	1	1	1	1	1	1	1
100	1	1	1			1			1	1			1	1			1	1		
101	1	1	1	1					1	1	1	1	1	1				1		1
102	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1
103	1	1	1	1	1	1			1	1										
104		1	1	1					1	1	1			1	1	1				
105	1	1	1						1			1	1					1	1	
106	1	1	1	1		1				1				1			1	1	1	
107					1	1				1	1	1	1	1	1	1	1	1	1	1
108			1				1													
109	1									1	1	1	1		1	1	1			
110	1				1	1					1	1	1	1	1	1	1	1	1	1
111			1								1	1		1	1	1	1	1	1	
112	1		1	1							1			1	1	1	1	1	1	1
113	1	1					1	1		1	1	1	1	1	1	1	1	1	1	1
114	1	1	1	1	1	1	1	1	1	1										
115	1	1	1	1	1	1				1							1	1	1	
116	1									1		1	1		1	1	1	1	1	
117	1	1	1											1	1	1	1	1	1	1
118	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

1 = yes  
0 = no

Data Tables for Recent Graduates Survey

Number	Training_Topics_Was_Included									Training_Topics_Would_Benefit										
	Practice_Type_Was	Practice_Locate_Was	Practice_Eval_Was	Fund_Estimate_Was	Personnel_Was	Management_Was	Benefits_Was	Accounting_Was	Electronic_Schedule_Was	IT_Records_Was	Practice_Type_Would	Practice_Locate_Would	Practice_Eval_Would	Fund_Estimate_Would	Personnel_Would	Management_Would	Benefits_Would	Accounting_Would	Electronic_Schedule_Would	IT_Records_Would
119	1											1	1	1	1	1	1	1	1	1
120	1	1			1				1	1			1	1	1	1	1	1	1	1
121	1	1	1				1					1		1			1	1	1	1
122	1		1		1				1	1	1		1	1	1			1	1	1
123	1											1	1	1	1	1	1	1	1	1
124	1	1	1											1	1	1	1	1	1	1

1 = yes  
0 = no

### Data Tables for Recent Graduates Survey

Number	Training_Thoughts_Costs																
	Reference_Materials	Clinic=Private	Train_Expectations	Recommendations	Prepared	More_Training	Additional_Training	Seminars	Consultants	Assistance	Other	\$_Year1	\$_Year2	\$_Year3	Training=Reduced_Cost	Mistakes	Mistakes_Cost
1	0	0	0	0	0	1	0			1					1	1	1
2	1	1	0	0	0	1	0		1	1							
3	0	0	0	0	0	1	0			1					1		
4	0	0	0	0	0	1	1	1			\$500	\$500			0	1	0
5	1	0	0	1	0	1	1	1	1	1	\$15,000				0	1	0
6	1		1	0	1		1			1	\$100	\$100			0	0	0
7	0	0	0	1	0	1	1		1	1		\$300					
8	1	0	0	1	0	1	1	1		1	\$0	\$0	\$0			1	1
9	1	1		0	1	1	1			1					0	0	
10	0	0	0	1	0	1	0			1							
11	0	1		1	0	0	0								0	0	
12	1	0	0	1	0		1	1	1	1	\$4,000	\$2,000				1	1
13	1	1	0	1	1	1	0								0	0	
14	1	0	0	1	0	1	1			1					0	0	0
15	1	1		1	0	1	0								1	1	1
16	0	0	0	0	0	1	1	1		1	\$100	\$100			1	1	0
17	0	1	0	1	0	1	1	1	1	1	\$3,000				1	1	
18	0	1		0	0	1	1	1	1		\$40,000	\$10,000			0	0	0
19	1	0	1	0	0	1	1	1							1	0	
20	0	0	0	1	0	1	0								1	1	1
21	1	1	1	0	1	0	1	1							0	0	0
22	1	0	0	0	0				1	1	\$10,000	\$10,000	\$10,000		0	0	0
23	1	1	1	1	0	1	1	1		1	\$1,000	\$2,000	\$35,000		0	0	
24	0	0	1	0	0	1	1	1		1	\$500	\$500			1	1	0
25	0	0	1	1	0	1	1	1	1	1	\$5,000	\$10,000	\$2,000		1	0	
26	1	0	1	0	1	1	1	1			\$5,000	\$5,000	\$10,000		1	0	
27	1	1		1	0	1	1	1		1	\$300	\$300			0	0	
28	0	1		1	0	1	1		1	1	\$5,000				1	1	1
29	1	1	0	1	0	1	1	1		1					0	0	0
30	1	0	0	1	0	1	0				\$0	\$0	\$0		1	1	1
31	0	0	0	1	0	1	0								0	0	
32	1	1		1	0	1	1	1		1	\$400	\$400			1	0	0
33	0	0	0	1	0	1	1	1		1	\$600	\$600			1	0	0
34	1	1		0	1	1	0								0	0	
35	1	0	1	1	0	1	1	1	1	1					1	1	1
36	1	0	0	0	0	1	0										
37	1	1	0	1	1	0	1	1		1					0	0	0
38	1	1		1	1	1	1	1	1	1	\$4,000	\$2,000	\$2,000		0	0	
39	0	1		1	0	1	1	1	1	1	\$800	\$1,000	\$10,000		1	0	
40	1	1	1	1	0	1	1	1		1	\$450	\$450			1	1	1

1 = yes  
0 = no

## Data Tables for Recent Graduates Survey

Number	Training Thoughts Costs																
	Reference_Materials	Clinic=Private	Train_Expectations	Recommendations	Prepared	More_Training	Additional_Training	Seminars	Consultants	Assistance	Other	\$_Year1	\$_Year2	\$_Year3	Training=Reduced_Cost	Mistakes	Mistakes_Cost
41	1	1	1	1		1	1	1		1					1	0	0
42	1	0	0	0	0	1	1	1		1		\$500			1	1	0
43	0	0	1	1	1	1	0								1	1	0
44	1	0	1	0	1	1	0	1									
45	1	0	1	1	0	0	0									0	1
46	1	1		1	0	1	1	1	1	1	1	\$1,000	\$1,000		1	1	1
47	1	0	0	1	0	1	0								1	0	
48	1	1	1	1	1	1	1	1	1	1		\$5,000	\$5,000	\$5,000	1	1	1
49	0	0	0		0	1	1			1					1	1	1
50	0	0	0	1	0	1		1	1	1		\$0	\$0	\$0		1	
51	1	0	1	1	1	1	1			1		\$1,000	\$1,000	\$1,000	0		1
52	1	0	0	1	1	1	1	1		1		\$3,000	\$0	\$0	1	0	0
53	0	1	0	1	1	1	1	1	1	1		\$10,000	\$10,000	\$10,000	1	1	1
54	1	1	0	1	0	1	1			1	1	\$8,000	\$5,200	\$5,200	0	1	1
55	1	0	0	1	0	1	1	1		1		\$1,000	\$1,200	\$500	0	0	0
56	0	1	0	0	0	1	1		1	1					1	1	1
57	1	0	1	1	0	1	1	1	1	1		\$2,000	\$2,000		1	0	1
58	1	0	0	0	1	1	0		1	1					1	1	1
59	1	1	1	0	0	1	0			1					1	1	1
60	1	0	0	0	0	1	1	1		1					1	1	0
61	1	1	0	0	0	1	1	1							1	0	
62		1		1	1	1	0								0	0	
63	1	0	1	1	1	1	1		1			\$200	\$200		0	0	0
64	1	0	0	1	0	1	1	1		1					0	0	1
65	0	0	1	1	1	1	1	1		1	1	\$300	\$300		0	0	
66	0	0	0	0	0	1	1	1			1					1	1
67	1	0	1	1	0	1	1			1					1	1	
68	0	0	0	1	0	1	1	1	1	1		\$3,200	\$4,000	\$4,000	1	1	1
69	1	0	0	0	0	1	1	1							0	1	1
70	1	1	0	0	0	1	1	1	1	1		\$0	\$15,000		1	1	0
71	1	0	0	1	0	1	1	1		1		\$500	\$500		0	0	0
72	1	1		0	1	1	0								1	1	1
73	1	0	1	1		1	1	1		1					0	0	0
74	0	0	1	1	0	1	0								1	1	0
75	0	0	1	0	0	1	1	1		1		\$750	\$1,000		1	0	
76	1	0	1	1	1	1	1	1				\$500	\$1,500		0	0	
77	1	0	0	0	0	1	1		1	1					0	1	1
78	1	0	0	1	0	1	1	1		1		\$1,200	\$1,000	\$1,200	1	0	
79	0	0	1	0	0	1		1		1		\$1,000	\$3,000	\$5,000	1	0	

1 = yes  
0 = no

### Data Tables for Recent Graduates Survey

Number	Training Thoughts_Costs																
	Reference_Materials	Clinic=Private	Train_Expectations	Recommendations	Prepared	More_Training	Additional_Training	Seminars	Consultants	Assistance	Other	\$_Year1	\$_Year2	\$_Year3	Training=Reduced_Cost	Mistakes	Mistakes_Cost
80	1	1	1	0	0	1	1	1		1		\$300	\$300		0	0	0
81	0	0	1	0	1	1	0								0	1	0
82	1	0	0	1	0	1	1	1	1	1		\$500	\$500		0	0	
83	0	0		0	0	1	1	1		1		\$10,000	\$1,000	\$1	1	1	1
84	1	1		1	0	1	0								1	1	1
85	1	1			0	1	1	1		1					1	0	
86	0	0	1		0	1	1			1		\$0	\$0		0	0	0
87	1	0	0		1	1	1	1	1	1		\$2,000	\$3,000	\$5,000	0	0	
88	0	1			0	1	1	1		1		\$400	\$1,500		1		
89	1	0	0		1	1	0								1		0
90	0	1	0		0	1	0			1		\$0	\$0	\$0	1	1	1
91	1	0	1		1	0	1	1		1		\$1,000	\$2,500		0	0	0
92	1	1			0	1	0								1	1	1
93	0	1			0	1	1			1					1	0	
94	1	1			0	1	1	1	1	1		\$40,000	\$15,000		1	0	
95	1	1		1	0	1	0								1	1	0
96	0	0	0	1	0	1	1			1		\$0	\$0	\$0	1	1	1
97	1	0	1	0	0	1	0								1	0	
98	1			1	1	1	1			1					1	1	1
99	1	1	0	0	0	1	1		1	1		\$12,000	\$12,000		1	0	
100	1	0	1	1	0	1	1			1	1	\$4,000	\$4,000	\$4,000	0	1	0
101	1	0	0	1	0	1	0									1	0
102	1	1		1	1	1	1	1		1		\$0	\$2,000	\$2,000	0	0	0
103	1	0	0	0	1	0	0								0	1	1
104	1	1		0	1	0	1	1		1		\$200			0	0	
105	1	0		1	1	0	0										
106	0	1		0	1	1	1	1		1		\$1,500	\$2,000		0	0	
107	1	0	0	0	1	0			1						1	1	1
108	1	0	1	0	0	1						\$30,000	\$6,000		1	1	1
109	0	0	0	0	0	1	1	1	1	1		\$200	\$7,000		0	0	0
110	0	0	1	1	0	1	1			1					1	0	0
111	0	1	0	0	0	1	1	1	1	1		\$7,500			0	0	0
112	1	0	1	1	0	1	1	1		1		\$11,000	\$1,500	\$1,500	1	1	1
113	0	0	0	1	1	1	1	1		1	1				1	1	1
114	0	1		0	1	1	1		1	1					0		
115	1	1		1	0	1	1	1		1		\$0			1	1	0
116	1	1		1	1	1	1	1							0	0	0
117	1	0	0	1	0	1	1			1					0	1	
118	1	1		0	1	0	0								0	0	

1 = yes  
0 = no

### Data Tables for Recent Graduates Survey

Number	Training_Thoughts_Costs																
	Reference_Materials	Clinic=Private	Train_Expectations	Recommendations	Prepared	More_Training	Additional_Training	Seminars	Consultants	Assistance	Other	\$_Year1	\$_Year2	\$_Year3	Training=Reduced_Cost	Mistakes	Mistakes_Cost
119	1	0	0	0	0	1	1	1		1					1	1	1
120	0	0	0	1	0	1	1	1	1	1		\$30,000	\$5,000			1	
121	0	0	0	0	0	1	1	1	1	1	\$500	\$1,500			0	1	0
122	1	1	1	0	0	0	1	1		1					0	0	
123	1	0	0	0	0	1	1	1		1	\$500	\$1,000	\$1,000		1	1	1
124	1	0	0	1	0	1	1	1		1	\$5,000	\$5,000			1	1	1

1 = yes  
0 = no

## Data Tables for Recent Graduates Survey

Number	Obstacles									Comments:
	Time_Constraints	Insufficient_Faculty	Improperly_Trained	\$_Constraints	Lack_Interest	Lack_Need	Other	Effect_Decision	Training	
1	0	0	1	0	0	0	0	0	1	1
2	1	1	0	0	0	0	0	0	1	0
3	1	1	1	1	0	0	0	1	1	0
4	1	1	1	0	0	0	0	1	1	1
5	1	1	1	1	0	0	0	0	1	0
6								0	1	0
7	1	0	0	0	0	0	0	1	1	1
8	0	0	1	0	0	0	0	0		0
9	1	0	0	0	0	0	0	0	1	1
10	1	1	0	1	0	0	0	1	1	1
11	1	1	0	0	0	0	0	0	1	1
12	1	1	1	0	0	0	0	0	1	0
13	0	1	0	0	1	0	0	1	1	1
14	0	0	0	0	0	0	1	1	1	0
15	0	1	0	0	0	0	0	1	1	0
16	1	0	0	1	0	0	0	1	1	0
17	1	1	0	1	0	0	0	1	1	0
18	1	1	0	1	0	0	0	1	1	1
19	1	0	1	0	0	0	0	0	1	0
20	1	1	0	0	0	0	0	1	1	0
21	1	1	1	0	0	0	0	0	1	1
22	1	0	1	0	0	0	0	0	1	1
23	1	1	1	0	0	0	0	0	1	0
24	1	1	1	0	0	0	0	1	1	0
25	1	1	0	0	0	0	0	1	1	0
26	1	1	0	0	0	0	0	1	1	0
27	0	0	1	1	1	0	0	1	1	0
28	1	1	0	0	0	0	0	1	1	0
29	1	0	0	0	0	0	1	0	1	0
30	0	0	1	0	0	0	1	0	1	0
31	1	1	1	0	0	0	0	1	1	0
32	0	1	0	0	0	0	0	1	1	0
33	1	1	1	0	0	1	1	1	1	0
34	1	0	1	0	0	0	0	1	1	0
35	1	1	1	0	0	0	0	0	0	1
36	1	1	1	0	0	0	0	0	1	0
37										1
38	1	1	0	1	0	0	0	1	1	1
39	0	1	1	0	0	0	0	1	1	0
40	1	0	1	0	0	0	0	1	1	1

1 = yes  
0 = no



## Data Tables for Recent Graduates Survey

Number	Obstacles									Comments:
	Time_Constraints	Insufficient_Faculty	Improperly_Trained	\$_Constraints	Lack_Interest	Lack_Need	Other	Effect_Decision	Training	
41	1	1	0	0	0	0	0	1	1	0
42	0	0	1	0	0	0	1	1	1	1
43	1	1	0	1	1	0	0	0	1	0
44	1	0	0	0	0	0	0	1	1	1
45	1	0	0	0	0	0	0	0	1	0
46	1	0	0	0	0	0	0	0	1	1
47	0	0	1	0	0	0	0	0	1	1
48	0	0	1	1	1	0	0	1	1	0
49	1	1	1	1	0	0	0	1	1	0
50	1	1	1	0	0	0	0	0	1	0
51	1	1	1	1	1	1	0	1	1	0
52	1	1	0	0	0	0	0	1	1	1
53	1	1	0	1	0	0	0	1	1	1
54	1	1	0	0	0	0	1	1	1	1
55	0	1	1	0	0	0	1	0	1	1
56	1	1	1	1	0	0	0	1	1	1
57	1	1	1	1	0	0	0	1	1	1
58	0	1	1	0	0	0	0	1	1	0
59	1	1	0	1	0	0	0	0	1	0
60	1	0	0	1	0	0	0	1	1	0
61	1	1	0	0	0	0	0		1	0
62	1	1	0	0	0	0	0	0	1	1
63	0	0	0	0	0	0	1	1	1	1
64		1	1					0	1	1
65	1							1	1	0
66		1	1					0	1	0
67	1	1	1					0	1	1
68	1	1	1	1				0	1	0
69	1	1						1	1	0
70	1		1	1				0	1	0
71	1	1	1					0	1	1
72			1					1	1	0
73	1	1	1	1				1	1	1
74	1	1						0	1	
75			1					0	1	
76	1							1	1	1
77	1	1						1	1	1
78	1	1	1					0	1	0
79	1							0	1	0

1 = yes  
0 = no

## Data Tables for Recent Graduates Survey

Number	Obstacles									Comments:
	Time_Constraints	Insufficient_Faculty	Improperly_Trained	\$_Constraints	Lack_Interest	Lack_Need	Other	Effect_Decision	Training	
80	1				1			0	1	1
81	1	1			1			0	1	0
82			1				1	0	1	1
83		1	1					0	1	0
84	1	1					1	0	1	0
85	1	1	1					0	1	0
86	1	1	1					0	1	1
87	1	1	1					1	1	1
88	1						1	0	1	0
89	1	1						0	1	0
90			1					0	1	0
91	1						1	0	1	1
92	1	1						0	1	0
93		1	1					0	1	0
94	1	1	1	1	1			1	1	0
95	1	1						0	1	0
96			1				1	1	1	0
97	1	1						1	1	0
98								1	1	1
99	1	1						1	1	1
100			1		1			0	1	1
101	1		1					1	1	1
102		1	1					1	1	1
103	1							0	1	0
104	1		1					1	1	0
105					1			0	1	1
106	1							1	1	0
107		1	1					1	1	1
108	1	1						1	1	0
109	1		1					0	1	1
110	1	1		1				0	1	1
111		1	1					0	1	1
112		1	1	1				0	1	1
113	1	1	1			1	1	1	1	1
114		1	1					1	1	1
115			1				1	1	1	
116			1	1				0	1	0
117	1								1	0
118								1	1	1

1 = yes  
0 = no

## Data Tables for Recent Graduates Survey

Number	Obstacles									Comments:
	Time_Constraints	Insufficient_Faculty	Improperly_Trained	\$_Constraints	Lack_Interest	Lack_Need	Other	Effect_Decision	Training	
119	1		1	1				1	1	0
120		1	1				1	1	1	1
121	1	1	1					1	1	0
122	1	1	1	1				0	1	0
123	1	1	1					1	1	0
124	1	1						1	1	0

1 = yes  
0 = no

## **APPENDIX E**

### **Institutional Review Board Exemption Verification**

Date: May 7, 2002

To: Keith J. Kohrs DDS SD

From: Gary T. Chiodo, DMD, Chair, Institutional Review Board, L106  
Susan Hansen, MD, MPH, Co-Chair, Institutional Review Board, L106  
Charlotte Shupert, PhD, Manager, Research Compliance and Assurance, L106

Subject: **7075 EXMPT**  
Survey of Effectiveness of Practice Administration Training in Graduate Orthodontic Programs.

**Initial Study Review  
Protocol Approval**

- [√] Your protocol is approved effective MAY - 7 2002.
- [√] This study met the criteria established for waiver of consent in accordance with 45CFR46.116(d)(1-4). No consent form is required.
- [√] This study met the criteria for EXPEDITED IRB review based on Category # 2<sup>1</sup>. (**Research involving anonymous survey.**)

Investigators must provide subjects with a copy of the consent form, keep a copy of the signed consent form with the research records, and place a signed copy in the patient's hospital/clinical medical record (if applicable).

If this project involves the use of an Investigational New Drug, a copy of the approved protocol must be forwarded to the Pharmacy and Therapeutics Committee (Pharmacy Services - Investigational Drugs, CR9-4).

If this is a cancer study, we will notify the Oregon Cancer Institute (OCI) of the IRB approval. As the Principal Investigator, you are responsible for providing the OCI with copies of the final approved protocol/consent form.

1. 63 FR 60364-60367 (November 9, 1998).