AEGD Programs: Why Now, Why More?


Abstract: With an increased number of dental schools graduating more dentists, along with the opening of new dental schools throughout the United States, more graduating dental students are considering utilizing Advanced Education in General Dentistry (AEGD) programs as a means to increase their understanding of the complexity of modern dentistry and to gain additional training and experience before heading into practice. This position paper describes how these programs can aid in transforming the face of dental education to address the needs of graduates and best educate the next generation of dental professionals. Its purpose is to examine reasons why dental students are choosing to participate in AEGD programs and to support a call for additional programs. An online survey of current AEGD residents was conducted to investigate reasons why they chose to enter this specific postgraduate opportunity. This position paper will also discuss how AEGD programs can be an effective training mechanism to address problematic issues such as access to care and dental licensure. Interest in AEGD programs will continue to rise, and this paper provides support for the expansion of such programs.

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Dental education has witnessed a dramatic change in the discussion of what skills and knowledge a dental graduate must possess. While the contents of most dental curricula have exploded with increased didactic material, debate still continues on appropriate methods for delivery of this material. Many programs have incorporated aspects of integrated curricula and comprehensive care as a means to improve overall knowledge of health care issues in their dental students. A recent report further articulated a vision for education for the health professions that requires “three fundamental shifts: from isolated to [harmonized] education and health systems, from stand-alone institutions to networks, alliances, and consortia, and from inward-looking institutional preoccupations to harnessing global flows of educational content, teaching resources, and innovations.”

Additionally, new accreditation standards have led schools to find ways to increase the use of evidence-based dentistry throughout the four years of the curriculum. These new standards have also led to a need for more community-based opportunities for dental students to obtain additional training. Changes in the National Board Dental Examination Parts I and II, with the potential for eventually having a single examination, have led many to increase efforts towards vertical integration of the basic and clinical sciences. In addition, the issue of access to care has altered the educational landscape such that dental training now has a major emphasis on trying to train health care professionals who will meet this growing need. Overall, changes in the concept of what an oral health care provider of today should be and how new technologies and research are continuously altering the landscape of dental education have driven many institutions to find new ways to address the evolving process that is dental education.

Advanced Education in General Dentistry (AEGD) programs have received increased interest over the last few years as a potential means of addressing many of these issues. With an increased number of dental schools graduating more dentists, along with the opening of new dental schools throughout the United States, some states are utilizing AEGD programs as a means to aid students in their understanding of the complexity of modern dentistry and to gain additional training and experi-
ence before heading into practice. The purpose of this position paper is to examine potential reasons why dental students are choosing to participate in AEGD programs and to support a call for more programs. Additionally, we will describe how these programs can aid in transforming the face of dental education to address important issues and best educate the next generation of dental professionals.

AEGD Programs

According to the 2008-09 Survey of Advanced Dental Education published by the American Dental Association, the number of AEGD programs has remained fairly constant over the past seven years. However, enrollment is up in existing AEGD programs, as well as in General Practice Residencies and several dental specialty programs. While applications to AEGD programs have increased, the number of applications varies annually depending on the number of programs to which each student applies. Thus, the number of applications can be an indicator of competitiveness in a discipline from year to year, and by current indications, it is becoming more competitive to get into an AEGD program (Table 1).

This increase in applications, in some ways, may be linked to a change in students’ beliefs that postdoctoral education should be required or at the least that it is a beneficial adjunct to the typical dental curriculum. According to the 2009 American Dental Education Association (ADEA) survey of dental school seniors, only 25.6 percent of the 1999 graduating students agreed that a postdoctoral year be required, while 37.1 percent of seniors in 2009 held this belief. This trend appears to indicate that more students are interested in seeking postdoctoral training opportunities than in the past. A previous study determined that important attributes in selecting a graduate opportunity were intellectual content, challenging diagnostic problems, and programs that help build special skills or unique talents. Another study found that patient management issues were a strong motivating factor for those pursuing postdoctoral training.

While it is natural to assume that the amount of educational debt accrued might affect a graduate’s decision to spend the extra time required in getting postgraduate training, the most recent ADEA senior surveys (for 2002 to 2009) found that this is not true of those pursuing advanced education. In spite of rising tuition rates and increased debt among graduates, those students pursuing advanced education opportunities remain the group least influenced by the amount of debt (Table 2).

In the 2003 ADEA senior survey, the question of educational debt influencing immediate plans was asked to elicit a reflective answer rather than just a yes or no response. Participants were asked what they would have pursued if it were not for their educational debt. Only 12.8 percent of the respondents would have chosen a postgraduate plan different from AEGD. This was a much lower percentage than all other categories of respondents who would have chosen another option. For instance, 45.6 percent of those employed in community clinics would have chosen to go into a solo private practice or a group practice if they could have.

Survey of Current AEGD Residents

To investigate reasons for the increase in AEGD applications, we conducted a survey in 2011.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Predoctoral Graduates</th>
<th>Percent Change from 2005</th>
<th>Number of AEGD Applications</th>
<th>Percent Change from 2005</th>
<th>First-Year AEGD Enrollment</th>
<th>Percent Change from 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>4,478</td>
<td>—</td>
<td>4,113</td>
<td>—</td>
<td>535</td>
<td>—</td>
</tr>
<tr>
<td>2006</td>
<td>4,515</td>
<td>+0.8%</td>
<td>4,485</td>
<td>+9.0%</td>
<td>524</td>
<td>-2.1%</td>
</tr>
<tr>
<td>2007</td>
<td>4,714</td>
<td>+5.3%</td>
<td>3,751</td>
<td>-8.8%</td>
<td>535</td>
<td>0</td>
</tr>
<tr>
<td>2008</td>
<td>4,796</td>
<td>+7.1%</td>
<td>4,225</td>
<td>+2.7%</td>
<td>554</td>
<td>+3.6%</td>
</tr>
<tr>
<td>2009</td>
<td>4,873</td>
<td>+8.8%</td>
<td>4,990</td>
<td>+21.3%</td>
<td>607</td>
<td>+13.5%</td>
</tr>
</tbody>
</table>

using the online survey tool SurveyMonkey to ask nine questions of all current AEGD residents. The survey contained five-point rating scale questions with choices ranging from “not important” to “extremely important,” after corrections made based on feedback from a survey specialist. The project was then submitted to the Institutional Review Board (IRB) at the University of the Pacific Arthur A. Dugoni School of Dentistry. Following IRB approval, a website link for the anonymous survey was obtained, and an invitation to participate was created. The survey was then sent by e-mail to all AEGD program directors across the United States with instructions for completion by their AEGD residents. Two separate e-mail reminders were sent three weeks apart to each program director requesting the participation of their AEGD residents in the study. Participants were informed that the survey was anonymous and that there were no incentives for providing responses. The summary of responses from the 112 respondents is shown in Table 3.

Some interesting findings came out of this summary. The overwhelming reason respondents chose to participate in an AEGD program was a desire to increase their knowledge and clinical skills (Question 2). Along with an opportunity to do more clinical dentistry (more restorative procedures, Question 7) and an opportunity to learn about technological advances in restorative dentistry (Question 9), this finding demonstrates that two of the primary reasons respondents chose an AEGD program was to increase their clinical skills and provide better care to their patients. While this appears to be due in part to a feeling of unpreparedness to enter private practice after graduation from dental school (Question 1), it is

<table>
<thead>
<tr>
<th>Question</th>
<th>Extremely Important</th>
<th>Very Important</th>
<th>Minimally Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling of unpreparedness to enter private practice after graduation from dental school.</td>
<td>20.7%</td>
<td>22.5%</td>
<td>39.6%</td>
<td>9.9%</td>
</tr>
<tr>
<td>2. Desire to increase knowledge and clinical skills.</td>
<td>81.3%</td>
<td>14.3%</td>
<td>4.5%</td>
<td>0</td>
</tr>
<tr>
<td>3. More exposure to the management of medically compromised and special needs patients.</td>
<td>18.0%</td>
<td>20.7%</td>
<td>33.3%</td>
<td>22.5%</td>
</tr>
<tr>
<td>4. Opportunities for student loan deferral.</td>
<td>3.6%</td>
<td>4.5%</td>
<td>11.6%</td>
<td>29.5%</td>
</tr>
<tr>
<td>5. Opportunity to wait for better practice opportunities following U.S. economic recovery.</td>
<td>5.4%</td>
<td>5.4%</td>
<td>19.8%</td>
<td>24.3%</td>
</tr>
<tr>
<td>6. AEGD residency as a substitute for a clinical licensure exam.</td>
<td>6.3%</td>
<td>1.8%</td>
<td>8.1%</td>
<td>8.1%</td>
</tr>
<tr>
<td>7. Opportunity to do more clinical dentistry (more restorative procedures).</td>
<td>38.4%</td>
<td>33.0%</td>
<td>16.1%</td>
<td>8.9%</td>
</tr>
<tr>
<td>8. Preparation to enter an academic career.</td>
<td>8.0%</td>
<td>7.1%</td>
<td>16.1%</td>
<td>25.0%</td>
</tr>
<tr>
<td>9. Opportunity to learn about technological advances in restorative dentistry.</td>
<td>30.4%</td>
<td>32.1%</td>
<td>27.7%</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

Note: Percentages may not total 100% because of rounding.
interesting to note that increasing skills predominated over other issues offered in the survey.

In the results, we also discovered that a group of respondents considered having an AEGD residency acting as a substitute for a clinical licensure exam (Question 6) an important component of the program. While we do not know how many of our responses came from students in states where a year-long residency program can be used for licensure, these results indicate that this issue is but one piece of the process in elucidating why graduating dental students are investigating enrolling in an AEGD program. While the percentage was not as high as in some other categories, this is an interesting issue and one that will probably change with time if more states adopt this policy.

Opportunities for student loan deferral (Question 4) and the opportunity to wait for better practice opportunities following U.S. economic recovery (Question 5) did not appear to be motivating factors for most of the respondents. This may indicate that while monetary issues typically play some role, for most applicants this challenge does not outweigh the desire to increase the skill and knowledge base that an AEGD program will provide.

The ability to gain more exposure to the management of medically compromised and special needs patients (Question 3) received responses across the spectrum of choices, indicating that it was an important issue for some while not as important for others. However, almost all of the respondents attached some level of importance to this opportunity. Whether this finding is due to few opportunities in the predoctoral curriculum to treat people with special needs and medical complexities or a desire to become more proficient, those within an AEGD program do attach significance to the opportunity to treat these patients.

Finally, not many respondents attached importance to the ability of an AEGD program to prepare them to enter an academic career (Question 8). While it is encouraging that 30 percent of those who answered the survey saw this as at least somewhat important, we had hoped that this number would have been higher as this is a group that will receive the training and experiences to make them excellent dental academicians. Dental schools and AEGD programs can use this finding to increase awareness among dental students that general dentistry residency programs foster the training of future faculty members.

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**Comments from Survey Respondents**

A number of AEGD residents provided additional comments about their reasoning for choosing an AEGD program beyond the questions posed in the survey. Most comments were in relation to Question 2 regarding the desire to increase knowledge and clinical skills. Residents reported that this factor was of primary importance to them for two main reasons. First, many sought to gain training in complicated procedures not part of a typical dental school program, such as implant dentistry, esthetics, using IV sedation, crown lengthening, and more complicated periodontal surgical techniques. Second, several residents thought that their dental school training did not provide enough clinical experiences and that the AEGD program would allow them to gain confidence in their general dentistry skills. Interestingly, some comments were made that AEGD training would provide the students with the opportunity to work closely with different specialists and gain a better understanding of treatment planning complex cases.

For many residents responding to our survey, an AEGD program was seen as a way to prepare for particular career choices. Many mentioned that the military branches prefer their dentists to obtain AEGD training and that there are greater opportunities for advancement with this training, while some mentioned that AEGD training would make them more appealing and competitive in the current job market. Additionally, for a subset of respondents, AEGD represented a means to become competitive for application to dental specialty programs.

The other interesting point mentioned by a few of the survey respondents was that AEGD would give them access to the operating room for treating patients with special needs. Along the same lines, others mentioned that AEGD training would give them exposure to populations of patients not seen often enough in their dental program, such as geriatric patients or complicated pediatric patients.

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**AEGD Programs’ Contribution to Current Issues**

There are multiple reasons why students choose to pursue an AEGD program, and multiple aspects of
An AEGD program can contribute to the development of a well-trained health practitioner. In spite of this variety, these programs can be utilized by the dental profession to address several of the following issues.

Access to Care

General dentistry and pediatric residencies have gained increased exposure in response to the growing need to provide more care to underserved populations.\textsuperscript{8,11} Since 2006, the ADEA senior survey has included questions regarding access to oral health care,\textsuperscript{8,12,13} and respondents have stated how strongly they agree with the following four statements: 1) The level of access to oral health care is a major problem in the United States; 2) Providing care to all segments of society is an ethical obligation; 3) Providing care to all segments of society is a professional obligation; and 4) Everyone is entitled to receive basic oral health care regardless of ability to pay. In the surveys since 2006, only a small percentage of respondents have disagreed with these statements, reflecting the opinion that these issues are consistent with the dental profession’s desire to do more for underserved populations.

The Institute of Medicine (IOM) was asked to assess the current oral health care delivery systems in the United States and, in 2011, published the report \textit{Improving Access to Oral Health Care for Vulnerable and Underserved Populations} as a potential vision for oral health care delivery in this country.\textsuperscript{9} This IOM report strongly recommends funding for more general dentistry residencies in community settings in order to bring access to areas that need it the most. A recent study found that nationally there are 10,221,436 children with special health care needs and that the current U.S. dental care system has extremely limited capacity to care for these children.\textsuperscript{14}

One of the methods thought to increase care for the underserved is general dentistry residency programs, and AEGD programs are uniquely positioned to help fill the void in access to care.\textsuperscript{8-11} According to one study, most general dentists did not think their predoctoral dental education had prepared them well enough to treat special needs patients, mainly because they had limited access to treat these patients.\textsuperscript{15} Given the access to care problems for many patients with special needs, one advantage of a residency program is that the resident becomes more proficient in delivery of care because of the technical demands and communication skills required. These are skills that a newly graduated dentist typically does not possess.

Additionally, there is general agreement that exposure to patients requiring more complicated procedures helps a clinician become more comfortable performing these skills, particularly those that demand a higher level of precision.\textsuperscript{9,14} A study by Badner et al. describes how the performance of AEGD residents providing dental care services to medically compromised patients in a community-based partnership program, in conjunction with a competency-based evaluation process, led to clinicians better trained to treat these patients.\textsuperscript{17} Columbia University College of Dental Medicine has developed a service-learning program for use in the training of AEGD residents that emphasizes the role of the health professional within the community.\textsuperscript{18} With programs like these, more graduates are able to see AEGD programs as a means by which they can gain more experience working with the diverse populations of patients that such programs can provide.

Pathway to Dental Licensure

A reexamination of the dental licensure process in the United States was initiated in the mid-1900s.\textsuperscript{19} This movement was aimed at the potential of eliminating the use of live patients as test subjects. Some argued that the live patient examination carries ethical dilemmas and questioned its value as an assessment tool.\textsuperscript{20-22} In 2002, the New York State legislature passed legislation that would allow the substitution of a successfully completed dental residency program approved by the Commission on Dental Accreditation (CODA) to replace the traditional clinical licensing examination.\textsuperscript{23} This innovative approach to meeting licensure requirements had the benefit of giving future dentists additional practice experience in a supervised setting and worked to ensure public protection. Although innovative for dentistry, the concept was not unique since it had been in place for years for those seeking a license to practice medicine. Thus, the expanded training protocol parallels that of medicine and reflects developments in the science and practice of the dental profession.\textsuperscript{24}

This expanded training requirement to earn licensure has created a greater demand for residency and postdoctoral positions in dentistry that will continue to increase if more states adopt this concept. In our survey of current AEGD residents, 16 percent of the respondents reported that using the one-year training in the AEGD program as a substitute for a clinical licensure examination was an important factor in their decision to enter the program (Table 3, Question 6).
This number is expected to increase if trends continue towards more states either eliminating clinical licensing exams or allowing residency training as an alternative to the exam. Currently, completion of a residency program of at least one year in length (PGY-1) in an accredited postdoctoral program in lieu of the clinical licensure examination as a pathway to licensure is offered in the states of New York (where it is mandated), Washington, Minnesota, California (must be an AEGD or GPR program), Delaware, and Connecticut. Washington has a unique PGY-1 requirement in that the residency must be completed in a low-income clinic. This approach addresses not only the issue of licensure reform but also attempts to tie it to improvement in access to oral health care.

**Pathway to Board Certification**

The American Board of General Dentistry (ABGD) allows a candidate who wishes to challenge the board certification process to do so via three entry points: completing a two-year CODA-accredited AEGD/GPR program; completing a one-year AEGD or GPR program plus 600 hours of continuing education; or obtaining Mastership in the Academy of General Dentistry. Upon completion of the educational requirements, candidates must then successfully pass a comprehensive written examination followed by an oral examination in all phases of general dentistry. ABGD board certification allows the general practitioner to fulfill future career milestones as a lifelong learner and ultimately results in increased professional development and patient satisfaction. While our survey of AEGD residents did not ask about this pathway, it is likely that this is another aspect of AEGD programs that will be appealing to future applicants.

**Conclusions**

The purposes of this position paper were to examine reasons why dental students are choosing to enter AEGD programs, emphasize the increase in interest in these programs, and call for more programs across the country. A survey conducted to investigate reasons why an increase in applications has occurred found that it is due to a combination of factors; however, it appears that most applicants are looking for an opportunity to enhance their knowledge and clinical skills while gaining increased exposure to technological advances in the field. Of lesser importance to most applicants were financial and licensing issues. These results suggest that interest in AEGD programs will continue to rise and that expansion of AEGD programs should be considered.

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**REFERENCES**