



Opinions of practitioners and program directors concerning accreditation standards for postdoctoral pediatric dentistry training programs

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Abstract

Purpose: This study was performed to assess opinions of program directors and practitioners about the importance and necessary numbers of experiences required by current accreditation standards for training of pediatric dentists.

Methods: A 32-item questionnaire was sent to all program directors of ADA-accredited postdoctoral pediatric dentistry training programs and to a random sample of 10% of the fellow/active membership of the American Academy of Pediatric Dentistry.

Results: An overall response rate of 56% was obtained from the single mailing. Practitioners and program directors differed significantly ($P < 0.05$) only in their opinions about the number of submucosal and intravenous sedation cases required for proficiency of eight experiences surveyed. The two groups differed significantly in 3 of 12 areas in terms of importance attributed for practice of contemporary pediatric dentistry: initiating and completing a research paper, biostatistics/epidemiology, and practice management. Program directors had little difficulty obtaining required experiences, and program dependence on Medicaid did not negatively affect quality of education.

Conclusion: Practitioners and program directors agreed on the importance of most experiences and activities required by current accreditation standards. (*Pediatr Dent* 21:354-358, 1999)

Discipline-specific accreditation standards for advanced specialty education programs are developed according to specific processes spelled out by the American Dental Association's Commission on Dental Accreditation (CODA).¹ The CODA selects representatives "in cooperation with the organization(s) nationally recognized in the discipline whose membership is reflective of the discipline" to develop standards for individual disciplines, including dental specialties.² These representatives form a committee that drafts and shepherds standards through an extensive review process which includes exposure to and comment by communities of interest as well as consideration by the CODA.

In one or more open forums, members of these communities of interest express opinions about the proposed standards. These opinions are heard, weighed and, in some cases, changes are made in the proposed standards. The CODA does not provide specific rules regarding how divergent opinions are factored into the developing standards; it only requires that the stan-

dards be aired openly and that the constituents of the dental community have opportunity to comment. The most recent standards for pediatric dentistry³ followed this development process. The committee drafting these standards was inclusive of academics, practice, advanced training programs, and the specialty board, thus helping to insure that the interests and needs of these groups were served.

In addition to development of standards, the CODA's process allows for assessment of the validity and reliability of accreditation standards and has policy indicating the schedule and rationale for periodic scrutiny of these documents.¹ In this policy, the CODA is attentive to changes in practice and disease patterns, for instance, and the need to consider "documented evidence" in determining revision.

The current standards for pediatric dentistry postdoctoral education were only recently approved and won't be up for validity and reliability assessment until early in the next century. The purpose of this study was two-fold. First, we wanted to assess the relative importance placed by program directors and practicing pediatric dentists on essential topics and experiences required by the current standards. Second, we were interested in knowing the opinion of these two groups on the number of essential experiences. Hopefully, the results of this study will contribute to the eventual assessment of the existing standards by providing data on the perceived importance of training activities by these two pivotal communities of interest.

Methods and Materials

The authors designed a questionnaire based on elements of the existing pediatric dentistry training standards.³ The draft instrument was piloted for clarity with two additional pediatric dentists and their comments incorporated into the final, four-part, 32-item questionnaire. Part I asked respondents to indicate numbers of various experiences they felt a pediatric dental resident would need to complete in training to be proficient upon graduation. Part II asked for the relative importance of selected experiences and topics based on the respondent's own practice experience. Part III was solely for program directors and asked them the difficulty of obtaining essential training experiences. Part IV asked demographic questions which helped characterize the respondent within the

Table 1. Respondent Characteristics

Respondent Type	AAPD Geographic Districts						Total**
	I	II	III	IV	V	VI	
Practitioner	21	24	23	25	33	23	149
Program Director	13	7	8	10	5	8	51
	Years as a Pediatric Dentist*					Total**	
	0-5	6-10	11-15	>15			
Practitioner	33	25	20	71	149		
Program Director	3	6	7	35	51		

*Significant difference at $P < 0.025$. **Total varies due to incomplete data response for some items.

sample. All questions forced respondents to select one of several choices. A section for written comments was included at the end of the questionnaire. A stamped return envelope was included with the questionnaire along with a cover letter that explained the purpose of the study and gave instructions for its return.

All 56 program directors of ADA-accredited pediatric dentistry training programs were sent a questionnaire. In addition, a 10% random sample of active and fellow members of the American Academy of Pediatric Dentistry (AAPD), constituting 304 members, was surveyed. The total 360 potential respondents were contacted only once, by first class mail.

All data were entered on PC using SPSS statistical software.⁴ Because the responses for each item in the survey were categorical, either frequency distribution or cross-tabulation with the chi-square (χ^2) statistic was used for data analysis. A value of $P < 0.05$ was established for significance.

Results

Respondent Characteristics

A total of 202 questionnaires were returned and entered, for an overall response rate of 56%. The response rate for program directors was 51 (91%) and practitioners 149 (49%). Table 1 provides a demographic profile of the total respondent pool, which was evenly distributed across AAPD districts. The largest responding cohort (106/53%) had been in practice more than 15 years, while those with 0-5 years (36/18%), 6-10 years (31/16%), or 11-15 years (27/14%) were relatively even in distribution. Eighty-three respondents were board certified in pediatric dentistry. We found no geographic difference between practitioner and program director cohorts ($\chi^2=6.26$, $P=0.28$), however, as one might expect, the program directors had fewer newly practicing pediatric dentists as compared to the practitioners, resulting in a significant difference ($\chi^2=9.35$, $P=0.025$).

Numbers of Experiences for Proficiency

The first part of the questionnaire asked respondents to indicate how many cases a resident should do while in training to be proficient upon graduation. We chose the term "proficient" as defined by CODA to indicate the highest level of skill attributed to specialists. Table 2 indicates the distribution of responses sorted by practitioner or program director. The two cohorts differed significantly in their responses in two

areas. These were submucosal ($\chi^2=16.0$, $P=0.007$) and intravenous sedation ($\chi^2=14.4$, $P=0.013$). In both, most program directors were comfortable with a small number of cases, while practitioners were divided with most recommending one of the three central categories ranging from 1 to 25 cases.

We were also interested in knowing if diplomate status affected responses, so the cohorts were collapsed and the data analyzed using board certification as a variable. None of the eight experiences emerged as significantly different between those board certified and those not.

Importance of Experiences and Topics

In the next section of the questionnaire, respondents rated the importance of certain experiences and topics in the training of a pediatric dentist, using their own pediatric dentistry practice as a basis. Table 3 reports the distribution of responses using the cohorts of private practitioners and program directors. The two groups differed significantly in their responses in three of the 12 items. When asked about initiating and completing a research paper, most program director responses were in higher priority categories 4 or 5. Practitioners were mostly either ambivalent (Category 3) or felt this activity was of low priority (Categories 2,1) ($\chi^2=15.1$, $P=0.004$). The topic of biostatistics and epidemiology was viewed differently by the two groups, with program directors tending to consider it more important while practitioners felt it less important ($\chi^2=13.7$, $P=0.008$). Practitioners also differed from program directors in their priority for design, implementation, and management of a contemporary pediatric dentistry practice. The majority of practitioners (83/56%) felt it essential, while the majority of program directors (28/53%) were less emphatic, although they clearly considered it important, accounting for a significant difference ($\chi^2=14.0$, $P=0.003$).

The further analysis comparing diplomates with non-diplomates, irrespective of whether they were program directors or not, showed one significant difference—initiating and completing a research paper. Diplomates were more likely to consider it important than non-diplomates ($\chi^2=9.1$, $P=0.05$).

Difficulty Obtaining Required Experiences

Accreditation standards require that residents have certain experiences during training. Obtaining these experiences may be difficult, particularly when a program is based in a dental school and the desired experience is in a hospital. Conversely, programs based in hospitals may not have the cadre of scientists or courses available to support research or coursework. In Table 4, the responses of program directors indicate that very few experience any difficulty obtaining the required experiences.

We then divided the program directors into school-based and hospital-based programs and sought differences for those experiences in Table 4, finding none.

Other Data Analyses

The responses to this questionnaire provided additional data which we analyzed but chose not to tabulate. The differences

Table 2. Training Experiences Needed by Pediatric Dentistry Residency Graduates for Proficiency[†]

Type of Experience	Resp Cat*	Number of Cases					
		0	1-5	10	25	>50	Don't Need
Oral sedation (in which patient is evaluated, sedated, treated by same resident)	Prac	1	17	75	53	2	-
	PrDr	1	6	33	12	-	-
Submucosal or intramuscular sedation (same criteria as above)**	Prac	7	26	37	43	18	15
	PrDr	2	16	11	7	2	13
Intravenous sedation (same criteria as above)**	Prac	12	26	28	23	15	42
	PrDr	7	12	3	3	2	24
Phase one orthodontic cases from diagnosis through treatment and/or retention	Prac	-	28	58	41	11	4
	PrDr	-	6	30	13	3	-
Comprehensive restorative cases in which resident performs diagnosis, preventive, restorative and recall	Prac	-	2	11	28	104	-
	PrDr	-	2	3	14	33	-
Comprehensive dental cases under general anesthesia in which same resident performs all dental/hospital procedures	Prac	-	3	45	71	26	-
	PrDr	-	2	11	30	9	-
General anesthesia cases when resident performs intubation, monitoring and associated functions, but not dentistry	Prac	4	44	36	36	9	17
	PrDr	3	11	13	13	5	3
Patients with special health care needs such as cerebral palsy, mental retardation or chronic illness	Prac	-	7	19	66	56	-
	PrDr	-	1	5	25	21	-

*Resp Cat is the respondent category of either practitioner (Prac) or program director (Pr Dr).

**Significant difference at $P < 0.05$. †Total varies due to incomplete data response for some items.

noted in the years as a pediatric dentist between the program directors and practitioners (Table 1) suggested that experience may direct opinions. We collapsed the original two cohorts of practitioners and program directors and sorted the entire sample of respondents by the years-in-practice groupings in Table 1. We then looked at differences between groups for the items listed in Tables 2 and 3. Of the 20 experiences and topic areas included in this analysis, only two—general anesthesia restorative cases and biostatistics and epidemiology—showed any significant difference in response by age. Most younger pediatric dentists felt that 25 general anesthesia cases were adequate while the oldest group of dentists, in practice more than 15 years, were split with almost as many choosing 10 or less cases as chose 25 cases. This difference was significant ($\chi^2=21.1$, $P=0.01$). Twenty-five cases was the most common choice for every year-in-practice grouping in this analysis. Interestingly, the group in practice the longest was also most supportive of the need for biostatistics and epidemiology with a trend to increasing importance with years in practice. The difference among groups was significant ($\chi^2=24.4$, $P=0.01$).

Finally, we wanted to know if the payer mix or dependence of programs on Medicaid/Title XIX played a role in educational quality. Of the total sample, 128/67% stated that the program they attended or the one they direct is either predominately or very dependent. This dependency was not significantly different for school-based or hospital-based programs. The pooled respondents also felt that this dependence was largely a non-contributory or slightly positive factor on education and this finding held up when the two program types were compared.

Discussion

We undertook this study to see how two important communities of interest felt about topics and experiences included in current pediatric dentistry training standards. We also felt that the data might provide guidance for program directors and for future evaluation of the standards. We also wondered how broad an exposure the public forums provide to the practice community whose attendance at national meetings might be sporadic and whose interest in the standards may be limited.

Table 3. Importance of Training Experiences for Pediatric Dentistry Residency Graduates

Type of Experience/Topic	Resp Cat*	Importance (5=essential, 1=not needed)				
		5	4	3	2	1
Initiating and completing a research paper**	Prac	13	25	50	31	28
	PrDr	12	17	12	6	6
Rotation in pediatric medicine involving taking histories, physicals, lab tests, assessing development, parent interviews	Prac	62	45	30	9	1
	PrDr	27	19	7	-	-
Basic life support (BLS)	Prac	125	19	5	-	-
	PrDr	48	2	3	-	-
Pediatric Advanced Life Support (PALS) or Advanced Cardiac Life Support (ACLS)	Prac	56	40	34	10	7
	PrDr	22	13	9	5	4
Biostatistics and epidemiology**	Prac	3	27	62	41	16
	PrDr	5	18	19	8	3
Genetics	Prac	16	50	55	22	5
	PrDr	8	23	16	6	-
Principles of child development, mental, intellectual, and physical	Prac	95	43	7	3	-
	PrDr	37	12	4	-	-
Infant oral health	Prac	96	34	12	5	1
	PrDr	37	11	4	-	-
Normal language development	Prac	32	62	45	8	1
	PrDr	12	21	16	2	-
Design, implementation and management of a contemporary pediatric dental practice**	Prac	83	48	18	-	-
	PrDr	20	28	3	2	-
Use of a computer	Prac	64	44	34	7	-
	PrDr	28	17	7	1	-
Biomedical ethics	Prac	58	43	38	5	4
	PrDr	23	20	9	1	-

*Resp Cat is the respondent category of either practitioner (Prac) or program director (Pr Dr).

**Significant difference at $P < 0.05$. †Total varies due to incomplete data response for some items.

While the CODA process exposes numerous communities of interest to the proposed standards, it isn't clear how their concerns are quantified and incorporated into draft accreditation standards. The process of determining the reliability and validity of existing standards after a period of use is only a little clearer in describing the role of data. The dental literature over the last decade provides little in the way of addressing training standards directly. The pediatric dental literature has examples of sampling educators on what is taught in specific areas, such as pulp therapy.⁴ It also provides surveys of practitioners' practices in a certain areas, such as use of nitrous oxide.⁵ In a recent national symposium of pediatric dental program directors, two presentations focused on accreditation issues, but only from procedural⁶ and political perspectives.⁷

The response rate to this questionnaire is considered good, particularly from the program directors. Their 95% response probably can be attributed to their vital interest in this topic. We were surprised that so many practitioners chose to respond. Their interest may be related to a desire to give back to the discipline. It should be noted that the sample was evenly

distributed geographically and, according to years in practice, reflective of an aging and experienced pediatric dental workforce.

Numbers of Experiences for Proficiency

The few areas which showed significant differences between cohorts deserve mention. Practitioners were more supportive of experiences in intravenous and submucosal sedation than were program directors. It may be that the large proportion of older practitioners responding affected this outcome, either having been trained with these techniques or having the options to use them in practice. Revisions in sedation guidelines at national and state levels may have worked to separate newer and older grandfathered practitioners. Another factor which may play into the differences between program directors and practitioners is the dependence on Medicaid by training programs. Medicaid reimbursement for these adjunctive procedures has always been poor, so they may be kept minimal.

Importance of Experiences and Topics

The differences in importance given to the three topic areas by practitioner and program director cohorts may be explained in several ways. Initiating and completing a research paper and biostatistics/epidemiology are areas known by program directors to be necessary in current standards and this may have influenced their response. On the other hand, they may believe that these are inherently valuable for a pediatric dentist. The question was structured so those respondents used their "practice of pediatric dentistry" as the basis of their answer. Confounding the interpretation of this finding is that older practitioners seemed to feel that biostatistics/epidemiology was important.

Board certification did not seem to be a differentiating variable. Because training standards require directors to be certified and many are, this may have biased the finding, with a disproportionate percentage of program director respondents.

The emphasis placed on practice administration by both groups should not be masked by the significant difference between the two cohorts. Both groups were in agreement as to the importance of this aspect of training, with the difference being attributed to the strikingly greater emphasis placed on this by practitioners.

Other Data Analyses

Finally, we were pleased to note that despite the dependency of training programs on Medicaid funding, program quality did not seem to suffer. The respondents' ambivalence and slight positivity may reflect the fact that the indigent population presents more challenges with their higher disease rates. This may actually contribute to problem-solving skills and enhance one's ability to practice pediatric dentistry.

Conclusions

1. Program directors and practitioners differed in opinion on the number of submucosal and intravenous sedation cases, with practitioners suggesting more than program directors,
2. Practitioners placed more importance on practice management and less on completing a research paper and biostatistics/epidemiology than did program directors,

Table 4: Program Directors' Difficulty in Obtaining Required Experiences

Required Experiences	Difficulty Rating (5=extremely, 1=no difficulty)				
	5	4	3	2	1
General anesthesia rotation with dental resident as anesthesiologist	3	4	4	10	29
Pediatric medicine rotation (as described in Table 3)	1	1	8	9	31
Initiating and completing a research paper	3	8	14	11	13
Completing 20 operating room/general anesthesia cases (see Table 2)	-	2	5	3	40
Oral/submucosal/intravenous sedation cases	5	7	7	4	26
Enough trauma to achieve competency	-	5	4	8	33

3. Programs had little difficulty obtaining required experiences, irrespective of whether they were hospital- or school-based.
4. Medicaid dependence did not seem to affect quality of education in training programs.

References

1. Commission on Dental Accreditation. Meeting Minutes, July, 1997. American Dental Association, Chicago, IL, 1997.
2. American Dental Association Commission on Dental Accreditation. Evaluation Policies and Procedures, Chicago, July, 1998.
3. American Dental Association Commission on Dental Accreditation. Standards for Advanced Specialty Education Programs in Pediatric Dentistry, Chicago, IL, 1997.
4. Primosch RE, Glomb TA, Jerrell RG. Primary tooth pulp therapy as taught in predoctoral pediatric dental programs in the United States. *Pediatr Dent* 19:118-22, 1997.
5. Wilson S. A survey of the American Academy of pediatric Dentistry membership: nitrous oxide and sedation. *Pediatr Dent* 18:287-93, 1995.
6. Ferretti GA. Status of guidelines and the scope of the specialty. *Pediatr Dent* 19(Special Issue):193-203, 1997.
7. Vann WF. The accreditation process for advanced education programs in pediatric dentistry: a look from the inside out. *Pediatr Dent* 19(Special Issue):203-7, 1997.