

## Pedodontic manpower and productivity in North Carolina — a pilot project

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### Abstract

*A pedodontic manpower and productivity pilot project was conducted utilizing the pedodontic private practitioners of North Carolina. The responses demonstrated a traditional pedodontic practice in the services performed even though the mean age of the practitioners was fairly young. Most practitioners had a single office located in a fluoridated area. Productivity results indicated that relatively high percentages of the practices' and the pedodontists' time were spent in the areas of restorative, diagnostic, and preventive while the area of orthodontics contributed a small proportion.*

The dental profession of North Carolina has been very active over the past twenty years in assessing the dental needs of the state's population, the supply and distribution of North Carolina dentists, and their productivity.<sup>1,3</sup> Office practice studies to date have concentrated on general practitioners; no data are available on the type and amount of services delivered in specialty practices in North Carolina, including pedodontics. In addition, little information is available about patterns of care in specialty practices at the national level. In an attempt to gain baseline data on pedodontic manpower and measure the office productivity of North Carolina pedodontists, a pilot project was conducted by the University of North Carolina Health Services Research Center and the American Academy of Pedodontics. This paper describes selected characteristics of North Carolina pedodontists and their practice.

It was recognized at the outset that projecting future dental manpower needs for pedodontic care is a multi-faceted problem. Some of the major variables that must be considered in dental manpower planning include the following:

1. number of patients needing care,
2. number of patients seeking care,

3. number of pedodontists available to provide care,
4. number of general dentists also willing to provide child care,
5. extent of third party coverage,
6. relative economic situation of the area,
7. intake of systemic fluoride by the population, and
8. change in the type of services rendered by the practicing dentists.

These factors all interplay to some degree either positively or negatively in each pedodontic office. The net results will be the summation of the situations for each pedodontist.

### Methods and Materials

A current list of practicing pedodontists was obtained from the UNC Health Services Research Center and was checked against the membership in the North Carolina Society of Pedodontics. From these two sources 36 pedodontists solely in private practice were identified. Each pedodontist was telephoned to solicit their cooperation for the survey of their practice. The survey instrument was developed for pedodontists from the survey used in the 1976-1977 North Carolina Dental Manpower Study which in turn was derived from the protocol developed by the American Dental Association as part of their Dental Planning Information System. The instrument consisted of instructions and three sections: demographic information, practice characteristics, and daily logs of office productivity for all dental procedures performed by the dentist, hygienist, and/or chairside assistant for two normal working days in the spring of 1980. Ten days after the surveys were mailed, each pedodontist was telephoned to provide instructions in completing the questionnaire and log, to answer any questions con-

cerning the material, and to encourage completion of the survey.

### Data Analysis

Totals, means, and proportions of pedodontist and practice characteristics were computed. The differences in patient characteristics (age, race, sex, and utilization type) and type of procedure provided in relation to day of reporting were analyzed by Student's t-test of the  $\chi^2$  test of independence. The differences in relation to day of reporting were not significant. Therefore, all presentations of patient characteristics and services provided are of combined data.

### Results

Thirty-one of the 36 surveys were completed and returned for a response rate of 86%. Therefore, all response data have N=31 except as otherwise noted.

#### Demographic Information

Thirty-eight years was the median age of respondents, with a range from 29 to 57. The median year of graduation from dental school was 1969 with a range from 1945 to 1977. Ninety-three and one-half percent (29) were male. Only 16% (5) stated that they had secondary practices. Those with a second practice spent an average of 12 hours per week in the secondary practice. Ninety-three percent of the practice locations were in fluoridated communities. Sixty-one percent of those responding estimated that over one-half of their patients lived in fluoridated areas, while another 26% estimated that 25 to 50% of their patients resided in fluoridated communities.

#### Practice Characteristics for Primary Practice Location

All respondents practiced in cities with populations of 10,000 or larger. Ten of 31 practiced in cities of 100,000 or larger. The average length of time at the current location was 7.9 years with a range of less than 1 year for two responses and a high of 33 years. Six of 31 provided care in their practice jointly with other dentists. Ninety percent (28) worked exclusively on a fee for service basis.

When given the opportunity to indicate their degree of activity in patient care, 58% (18) responded "not busy enough" and 39% (12) indicated they provided care to all who requested appointments and did not feel overworked. In fact, about 63% could schedule an appointment for both a patient of record or a new patient within one week (Table 1).

Estimates were made by the responding pedodontists concerning the portion of their gross incomes derived from third parties, either public or private. Seventy-six percent (23) stated that less than one-

**Table 1.** Percent distribution of pedodontists according to number of days necessary to schedule either a patient of record or a new patient for an appointment.

Number of Days	Patient of Record	New Patient
0-1	25.8 (8)*	9.7 (3)
2-7	35.5 (11)	54.8 (17)
8-14	35.5 (11)	35.5 (11)
15-30	3.2 (1)	0 (0)

\*Numbers in parenthesis are number of pedodontists.

fourth of their gross income came from third-party public assistance programs and 10% (3) had no income from this source. The remaining 13% (4) stated that this source contributed between 26 and 50% of their gross income. These figures were shifted to slightly higher levels where private insurance was concerned. Thirty-three percent (10) estimated that from 6 to 25% of their gross income came from private insurance while 60% (18) stated that 26 to 50% of their gross income derived from this source.

#### Office Productivity

The office productivity data are presented in Figure 1 and Table 2. Figure 1 demonstrates graphically the mean percent distribution of the types of services rendered over two days versus the mean percent distribution of time required to perform these procedures. This affords a quick comparison for each of the procedure categories. Table 2 further details the actual services according to the number performed, the percentage of all procedures, and the percentage of the pedodontists' time to accomplish the procedures.

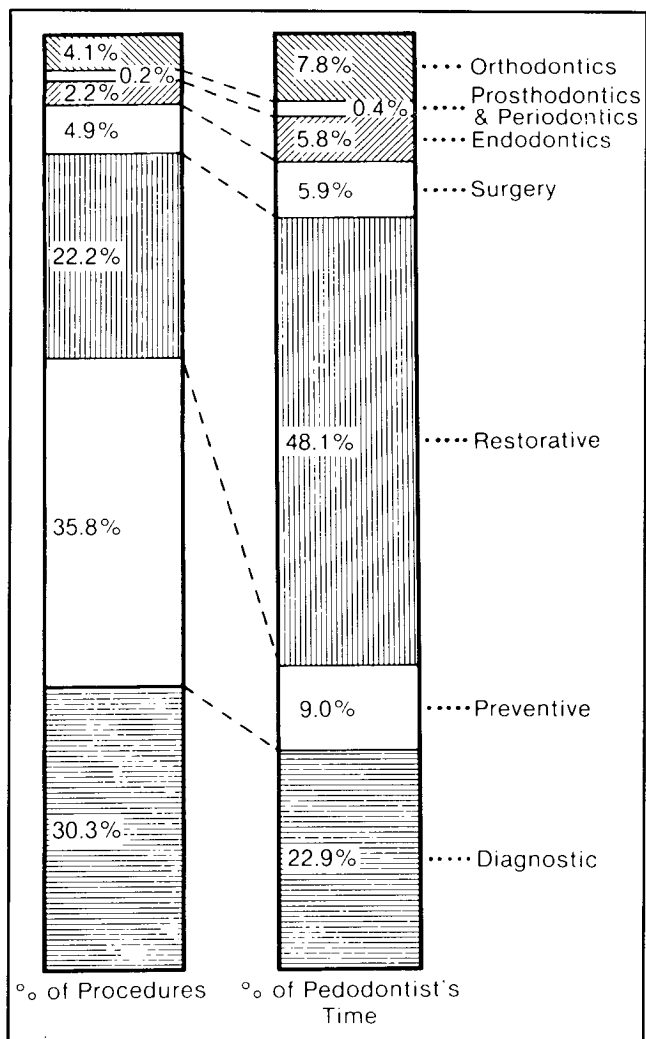
Diagnostic procedures constituted 30% of the entire practices' procedural output and required almost 23% of the available chairside time of the pedodontist. The preventive procedures constituted 36% of the procedures completed by the entire practice while taking 9% of the pedodontist's time.

The restorative aspect of the practice made up just over 22% of the procedures accomplished and took 48% of the available time. Surgery, endodontics, prosthodontics, and periodontics combined, contributed slightly over 7% of the total practice and required 12% of the time.

Orthodontics was found to be 4% of the procedures while taking approximately 8% of the time.

### Discussion

The high return rate (86%) of the surveys should provide information representative of the practicing



**Figure 1.** Percent distribution of types of services and time required to perform these services.

pedodontists of the state. These data characterize North Carolina pedodontists as relatively young solo practitioners practicing in small to medium-sized cities that are fluoridated. Their practices are of the more traditional preventive/restorative orientation with relatively little time spent doing orthodontic-type procedures.

The pedodontists do not consider themselves to be very busy, and this is supported by the short waiting period for appointments.

### Conclusions

From the data of 31 responding pedodontists, the following inferences can be made about pedodontic practices in North Carolina.

1. The median age of the respondents was relatively young at 38 years.
2. Eighty-four percent maintained a single practice without satellites.
3. Most of the practices were located in cities of less than 100,000 population.
4. Almost all practices (93%) were located in

**Table 2.** Number and percentage of dental procedures for total practice and percentage of pedodontists' time required for two reporting days.

Procedure	Number Performed	% of All Procedures	% of Time Required
<b>Diagnostic</b>			
Initial Exam	155	4.8	8.9
Periodic Exam	380	11.8	11.0
Radiographs	356	11.0	0.7
Other	88	2.7	2.3
<b>Total:</b>	<b>979</b>	<b>30.3</b>	<b>22.9</b>
<b>Preventive</b>			
Prophylaxis	492	15.3	7.3
Fluorides	459	14.2	.3
Preventive Instruction	168	5.2	1.0
Other	36	1.1	.4
<b>Total:</b>	<b>1155</b>	<b>35.8</b>	<b>9.0</b>
<b>Restorative</b>			
Primary Amalgams	361	11.2	22.3
Primary SSC	49	1.5	4.8
Primary Resins	49	1.5	4.1
Primary Sealants	8	0.2	.4
Permanent Amalgam	178	5.6	11.9
Permanent SSC	6	0.2	1.0
Permanent Resins	12	0.4	1.3
Permanent Sealants	21	0.7	0.9
Other	30	0.9	1.4
<b>Total</b>	<b>714</b>	<b>22.2</b>	<b>48.1</b>
<b>Surgery</b>			
Primary Teeth	135	4.2	4.6
Permanent Teeth	28	0.7	1.3
<b>Total</b>	<b>163</b>	<b>4.9</b>	<b>5.9</b>
<b>Endodontics</b>			
Primary Teeth	57	1.8	4.5
Permanent Teeth	13	0.4	1.3
<b>Total</b>	<b>70</b>	<b>2.2</b>	<b>5.8</b>
<b>Prosthodontics</b>			
	6	0.2	0.4
<b>Periodontics</b>			
	1	0.0	0.0
<b>Orthodontics</b>			
Diagnosis & Treatment Plan	8	0.2	0.5
Space Maintenance	39	1.2	2.3
Tooth Guide Appliance (distal shoe, x-bite)	37	1.1	2.0
Full Banded Therapy	31	1.0	2.2
Retention Appliance	4	0.1	0.1
Other	15	.5	.7
<b>Total</b>	<b>134</b>	<b>4.1</b>	<b>7.8</b>

fluoridated areas.

5. Nearly all (90%) worked for a "fee for service" basis primarily derived from "non" third-party payment.
6. Fifty-eight percent of the respondents stated

they were "not busy enough."

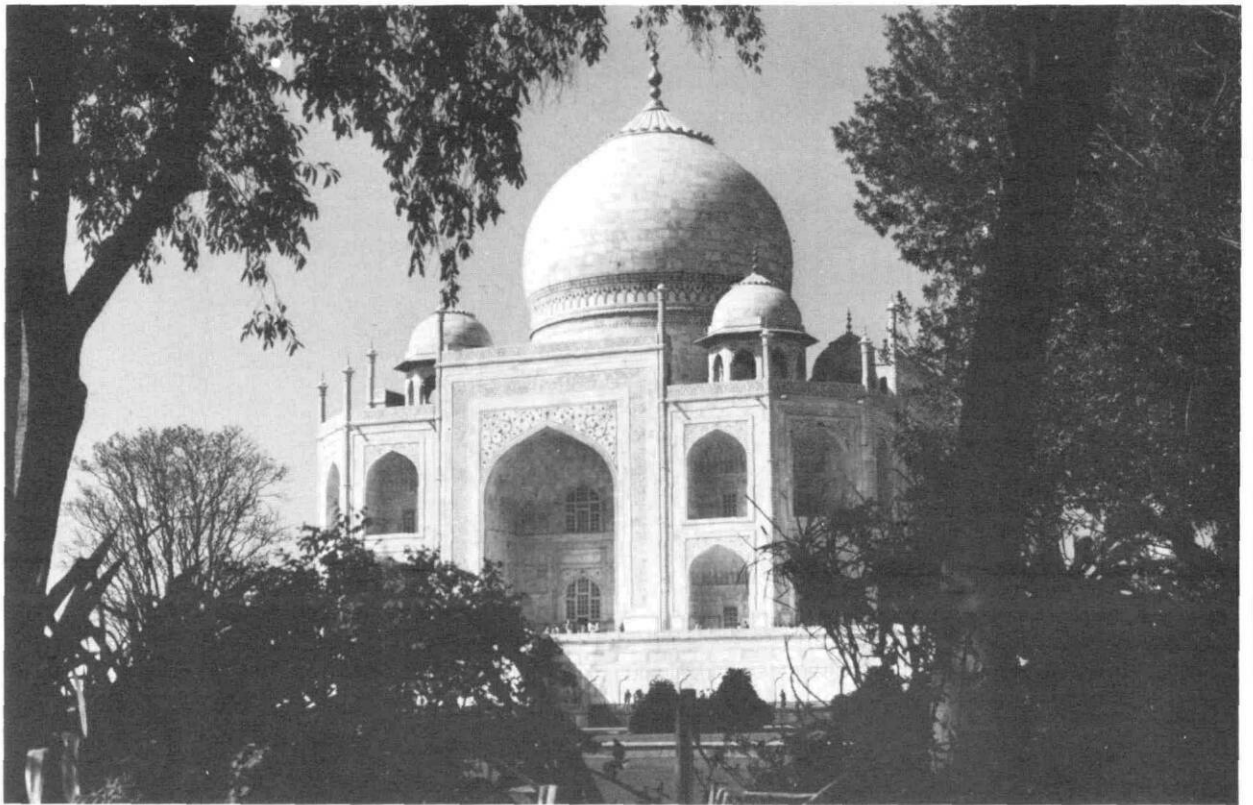
7. Restorative activities consumed the highest amount of the pedodontists' time (48.1%) while orthodontics was fourth in the amount of time needed in patient care (7.8%).

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