OBJECTIVES
of the AMERICAN COLLEGE of DENTISTS

The American College of Dentists in order to promote the highest ideals in health care, advance the standards and efficiency of dentistry, develop good human relations and understanding, and extend the benefits of dental health to the greatest number, declares and adopts the following principles and ideals as ways and means for the attainment of these goals.

(a) To urge the extension and improvement of measures for the control and prevention of oral disorders;

(b) To encourage qualified persons to consider a career in dentistry so that dental health services will be available to all and to urge broad preparation for such a career at all educational levels;

(c) To encourage graduate studies and continuing educational efforts by dentists and auxiliaries;

(d) To encourage, stimulate and promote research;

(e) To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient;

(f) To encourage the free exchange of ideas and experiences in the interest of better service to the patient;

(g) To cooperate with other groups for the advancement of interprofessional relationships in the interest of the public;

(h) To make visible to professional persons the extent of their responsibilities to the community as well as to the field of health service and to urge the acceptance of them;

(i) To encourage individuals to further these objectives, and to recognize meritorious achievements and the potentials for contributions to dental science, art, education, literature, human relations or other areas which contribute to human welfare—by conferring Fellowship in the College on those persons properly selected for such honor.
Contents

From the Editor's Desk .................................................. 3

Dental Licensure in the European Economic Community: Implications for the United States ............... 4
  James R. Freed
  Lester E. Block

A Profile of Women in Dental Education ......................... 10
  Jane P. Casada
  Leslie Roeder
  Janet Harrison
  J. G. Cailleteau

The Aging Population and Its Impact on the Future of Dentistry—A Symposium
  Keynote Address ................................................................ 14
    Eugene J. Truono, Moderator
  The Effect on the Dental Curriculum .............................. 17
    Chester W. Douglass
  Dental Insurance and Senior Americans ..................... 22
    Erik D. Olsen
  The Perspectives of Federal Programs ......................... 26
    Richard Adelson

A Family Oriented Practice May Be Different
  In the 1990’s ............................................................. 31
    H. Barry Waldman

Current Status of Adhesive Resin Systems ....................... 36
  Wayne W. Barkmeier
  Robert L. Cooley

Dental School Classmates Each Become
  ACD President ......................................................... 40

News of Fellows .......................................................... 42

Section Activities ........................................................ 45

Directory for Officers and Regents ................................. 49

Summer 1991
This is the beginning of a new era for the American College of Dentists. The College will have its own national headquarters and offices that are owned by the American College of Dentists Foundation. The move to the new office location will take place later this year.

The new site for the ACD Foundation and the ACD Central Office is in Gaithersburg, Maryland, approximately 25 miles northwest of Washington, D.C. and 15 miles north of Bethesda near Interstate 270. It is located in an attractive new growth area where many major organizations are relocating.

There is a general appearance of spaciousness in the area and the buildings are of superior construction (brick, steel and metal roofs). It is a new condominium property and the College will have approximately 3,900 square feet of space consisting of three connecting units.

The Steering Committee of the Campaign for the 90's looked at many sites in and near Washington, D.C., before recommending this location to the Campaign Committee and the Board of Directors of the American College of Dentists Foundation. The Committee was practical and prudent in considering only those properties that the ACD could afford with the funds that were being raised through the Campaign for the 90's. With the real estate market "down" this year, it became an opportune time to purchase a space. The negotiated price was approximately one-third less than the selling price of these same sample units two years ago.

Sufficient funds are already on hand to purchase the condominium and to build out the interior for suitable office spaces. However, it will be necessary for additional funds to be collected on the pledges to completely furnish and equip the new facilities as planned. The College will lease the required spaces from the Foundation, rather than leasing from some outside agency. Rental funds will then go to the Foundation of the College for building up the resources of the Foundation. The College, on the other hand, will have stabilized its rent, as well as provided support for the Foundation and additional projects. It is also planned that 15% of the funds collected will be set aside to earn interest that would be expected to cover the cost of office maintenance. If all of this can be accomplished, the ACD Foundation will have office spaces without a mortgage, an endowment for the maintenance cost and a reliable tenant in the ACD.

The Campaign for the 90's has been planned to be carried out over a five-year period. The original goal of $750,000 has not as yet been reached. The Campaign has been surprisingly successful, to this point, in the amount that has been raised, even though only 21% of the ACD membership has participated. Of the total amount of the goal, about $100,000, remains to be pledged. The majority of the pledges made, up to this time, were under $1,000. Fellows who have not previously participated may want to be a part of this Campaign before it is over, now that the new office is a reality.

One of the primary reasons for buying an office space was to eliminate the escalating cost of leasing, which has more than doubled over the past ten years to over $50,000 annually. The present space has only 1,900 square feet and is inadequate. Because funds, that have been going out of the College for office leasing expense, will now go to the ACD Foundation, the College and the Foundation should now have more funds available to promote the goals and objectives of the College.

Therefore, this new era will open up an entirely new spectrum of activities and opportunities for the College to assist in the advancement of the dental profession.

Those Fellows who have contributed to the building fund have made this new era possible. They are to be commended. Δ

Keith P. Blair
DENTAL LICENSURE IN THE EUROPEAN ECONOMIC COMMUNITY: IMPLICATIONS FOR THE UNITED STATES

J. R. Freed*  
L. E. Block**

The House of Delegates of the American Dental Association established a committee in 1988 to study "Freedom of Movement and Licensure Issues." One reason for the formation of the committee was that licensure by credentials, defined as states granting, without an examination, licenses to dentists already licensed in other jurisdictions, "... is arguably the most divisive issue facing organized dentistry today." Current ADA policy supports licensure by credentials but states that any system should maintain the states' rights of police powers to protect the public. This position is not strong enough for many of the 77% of dentists who, in a 1986 survey, said that the Association should take a stronger position in support of licensure by credentials and should compel constituent societies to work for pro-credentialing laws within each state.

While the debate within the United States continues, dramatic changes have been occurring in licensing of dentists in Europe which appear to have gone unnoticed in the United States. A process is underway which, when concluded, will remove all restrictions on the movement of people and goods in the European Economic Community (EEC) by December 31, 1992. For the dental profession, this means that a licensed dentist who is a citizen of any of the 12 member countries of the EEC can move without restriction to any of the other countries. Thus, unless laws in the United States change, it will be easier after 1992 for a dentist to move from Greece to the United Kingdom or from Ireland to Portugal than it will be to move from California to Oregon. The purpose of this paper is to examine the developments in Europe and the implications which they have for licensure of dentists in the United States.

European Economic Community

The history of the formation of the European Economic Community is important in understanding how the professions, including dentistry, have been affected. The first major step leading to the EEC and a single European market occurred in 1950. In that year the French Minister of Foreign Affairs, Robert Schuman, proposed the establishment of an organization open to all the countries in Europe for the purpose of pooling the production and consumption of coal and steel. Schuman's proposal led in 1952 to the formation of the European Coal and Steel Community (ECSC) with the six member countries of France, Germany, Italy, Belgium, the Netherlands and Luxembourg.

The European Economic Community (EEC) was established in 1957 by the Treaty of Rome with the same six countries which formed the ECSC as signatories. The goal of the EEC was to promote "an accelerated raising of the standard of living and closer relations between the States." The philosophy underlying this goal was that economic freedom produces prosperity and restrictions on freedom inhibit and distort the market so that there is a loss of prosperity as efficient producers are not rewarded.

The treaty had a chapter which dealt specifically with services including services provided by the professions. Chapter 2 of the treaty
stated that "restrictions on freedom to provide services within the Community shall be progressively abolished." The final step which is to lead to the single market was the Single European Act which came into force in July, 1987. This act sets December 31, 1992, as the date for the end to restrictions on the movement of goods, persons and services. The establishment of a single market "implies the right to exercise one's occupational or professional activity anywhere in Europe for firms, professions and wage-earners alike." There are currently 12 nations in the EEC. Denmark, Ireland and the United Kingdom joined with the original six members in 1973. Greece joined in 1982 and Portugal and Spain in 1986. The population of the countries of the EEC, the number of dentists and the population per dentist are shown in the table. The figures for Germany are before reunification. Two central issues stand out in this review of the history of the EEC. The first is the political implication of the various treaties. In order for the twelve independent and autonomous member countries to have reached a workable agreement under which their economies would be merged, it was necessary for each to give up a part of its national sovereignty. For example, member countries in the ECSC were prohibited from measures or practices which discriminated between producers or which interfered with the purchaser's free choice of supplier. Similarly, the EEC treaty required "the approximation of the laws of Member States to the extent required for the proper functioning of the common market." The sovereignty that the countries gave up was vested in separately created institutions including the European Parliament, the Council, the Commission, and the Court of Justice which were to act in the common good of the overall community. To illustrate the authority of these institutions, regulations issued by the European Council and Commission "are binding in their entirety and applicable in all Member States." The second issue, which is of particular significance for the health professions, is that the major changes in the regulation of health care providers resulted as part of a larger social movement. The force driving change in the relationship between the European countries was economic prosperity, not professional licensure. Prosperity was to be achieved by promoting competition through a reduction of monopoly power and restrictions of various kinds. All commercial barriers were to be removed and licensure requirements that effectively prevented dentists from moving between countries had to fall along with the others.

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**Population, Number of Dentists and Population per Dentist for EEC Countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Population</th>
<th>Dentists</th>
<th>Population per Dentist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>9,858,000</td>
<td>6,214</td>
<td>1,586</td>
</tr>
<tr>
<td>Denmark</td>
<td>5,130,000</td>
<td>4,795</td>
<td>1,070</td>
</tr>
<tr>
<td>France</td>
<td>55,170,000</td>
<td>34,578</td>
<td>1,596</td>
</tr>
<tr>
<td>Germany</td>
<td>61,077,000</td>
<td>38,826</td>
<td>1,573</td>
</tr>
<tr>
<td>Greece</td>
<td>9,998,000</td>
<td>9,104</td>
<td>1,098</td>
</tr>
<tr>
<td>Ireland</td>
<td>3,542,000</td>
<td>1,201</td>
<td>2,949</td>
</tr>
<tr>
<td>Italy</td>
<td>57,345,000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Luxemburg</td>
<td>370,000</td>
<td>181</td>
<td>2,044</td>
</tr>
<tr>
<td>Netherlands</td>
<td>14,671,000</td>
<td>7,585</td>
<td>1,934</td>
</tr>
<tr>
<td>Portugal</td>
<td>10,280,000</td>
<td>797</td>
<td>12,898</td>
</tr>
<tr>
<td>Spain</td>
<td>38,668,000</td>
<td>5,722</td>
<td>6,758</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>56,930,000</td>
<td>20,103</td>
<td>2,832</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>323,039,000</strong></td>
<td><strong>129,106</strong></td>
<td><strong>2,058</strong></td>
</tr>
</tbody>
</table>

*a Figures for 1985.  
*b Figures for 1986.  
*c Figures for 1987.  
*d Before reunification.  
*e No University course in dentistry.  
*f Italy is excluded.

Health care policy was not treated as a separate issue; the general economic policies that were established for the community were applied to the health professions. The role of health professionals was not to set the policy but to implement it.

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**Licensure of Dentists in Europe**

Licensure of health professionals in European countries has been based on educational qualifications.
tions rather than examinations given by a governmental agency. In the United Kingdom, for example, the Dentists Act states that recognized dental schools have power to "hold examinations in dentistry and grant licenses certifying the fitness of the holders to practice dentistry; and the holders' names shall be entered on a list of licentiates in dentistry." In effect, this means that the institution which grants the dental degree licenses the new graduate.

In effect, this means that the institution which grants the dental degree licenses the new graduate.

This is not to say, however, that EEC governments have no role in licensure of dentists. Governments maintain control by supervision of dental education rather than by examination of individual candidates. By procedures such as setting the conditions for obtaining a degree and sending inspectors to evaluate the adequacy of the instruction, governments determine and evaluate how the schools are training dentists and if that training is adequate.

Governments maintain control by supervision of dental education rather than by examination of individual candidates.

For licensed dentists whose dental degree was obtained in another country, European countries have required successful completion of an examination in addition to the educational qualifications. This examination could include written and oral examinations, demonstration of laboratory technique, examination of a patient, and clinical treatment of patients.

The changes in licensure of dentists in the EEC countries were based on the Treaty of Rome which established the EEC. One section of the Treaty required that "Directives shall be issued for the mutual recognition of diplomas, certificates and other evidence of formal qualifications." To do so, it was necessary to determine if the training of dentists was comparable among the various member states of the EEC. Since educational qualifications had been the basis for licensure, the issue of comparability of training was crucial in determining if the possession of a degree in dentistry could be used as a measure of competence to practice.

To implement the Treaty's requirement as it applied to the dental profession, an Advisory Committee on the Training of Dental Surgeons was established in 1976 "...to help to ensure a comparably high demanding standard of training of dental surgeons in the Community, with regard both to basic training and specialist training." The work of this committee led to the European Economic Community Dental Directives which were adopted by the Council of the European Communities in July, 1978. The Dental Directives were the third professional directive to be adopted following the Directives for Doctors in June, 1975, and the Directives for Nurses in July, 1977. The Dental Directives came into force on June 1, 1980.

The EEC Dental Directives stated that "Each Member State shall recognize the diplomas, certificates and other evidence of formal qualifications in dentistry awarded to nationals of Member States by the other Member States" for eight of the nine member countries (Greece, Portugal and Spain were not at that time members of the EEC). The Directives deferred freedom for individuals practicing dentistry in Italy to practice in other EEC member states because there was no university course in dentistry offered in Italy. Dentistry was practiced by individuals who held a medical diploma but who may or may not have undergone specialized dental training.

Training of dentists in Greece (admitted to the EEC in 1981) and Portugal and Spain (admitted in 1986) was either acceptable or has been modified so as to be acceptable so that dentists trained in these countries are eligible for licensure in the other EEC countries. For all member states except Italy, therefore, dentists can now be licensed to practice by presenting evidence of graduation (qualification) from an accepted school of dentistry, evidence of citizenship of an EEC country, and evidence that they are a registered practitioner in good standing in the country in which they qualified.

While the licensure restrictions have already been lifted, there still remain certain commercial or economic restrictions on the movement of dentists. These are not specific for dentists but apply to anyone from one EEC country who wishes to establish a business in another country. It is these restrictions that remain to be eliminated by the end of 1992 so that there is truly free movement of individuals within the EEC.

An example of these restrictions are those imposed by the United Kingdom. A dentist who wishes to practice as a principal in private dental practice or National Health Service general practice must show the following: 1) that there was a genuine need for services, 2) that he or she would be bringing at least £150,000 ($285,000 based on exchange rates in early 1991) to invest in the practice, 3) that new full-time employment for people already settled in the United Kingdom would be created and 4) that the dentist would be working full time. These restrictions apply only to a dentist who is setting up a business as a dentist and do not apply to a dentist who is being employed by someone else and is not acting as the principal in the practice.

In Britain, 99 EEC dentists had been registered as of January 31, 1989. How many of these were
employees and how many met the economic restrictions so that they could act as principals in the practice is not known. Since the provision of personal services such as health care may be impeded by factors such as language and culture as well as the cost of establishing a practice, the movement of dentists within the EEC that can be expected to take place after 1992 is difficult to predict.

Significance of EEC Actions for the United States

While the Treaty of Rome lays the foundation for the relationship of the EEC countries, the United States Constitution forms the basis for determining the rights of all individuals in the United States including the right of individuals to practice a profession. The Constitution also determines how commerce is regulated. Since the Constitution does not mention medicine, dentistry or health, the Supreme Court has interpreted the Constitution to give states the authority to regulate the practice of the health professions. The Court has found that the practice of medicine was not an absolute or unqualified right but is one which is subject to the police power of the state. In 1898 the Court ruled on a case involving licensure of physicians and found that "the power of the state to provide for the general welfare of the people authorizes it to prescribe all such regulations as in its judgment will secure or tend to secure them against the consequences of ignorance and incapacity as well as deception and fraud." The decision has been used as the basis for each state setting its own requirements for licensure.

The current status of licensure in the 50 states parallels in many ways the legal framework that existed in Europe prior to the formation of the EEC. Each American state like each EEC country before implementation of the Dental Directives can determine its own requirements for licensure with the caveat that these requirements do not violate federal law. A major difference, however, exists in the mechanism by which dentists are permitted to practice following completion of their training. In Europe, dentists are allowed to practice after graduation without a separate examination administered by a governmental body. The educational system, with the oversight of the government into the quality of the education, is judged to be sufficient for licensure.

Licensure in the United States has been significantly different in that performance on a state-administered examination in addition to completion of training has been required. There are a variety of reasons that could be advanced to explain this phenomenon. The one that fits with the constitutional basis for state control of professional licensure is that requiring an examination in addition to meeting an educational requirement serves to protect the general welfare. Dental education, particularly in the late 19th century, is replete with examples of poor quality "diploma mills" that operated for the profit of the entrepreneur who owned the school. Since there was no reliable source which was evaluating dental schools to assure the quality of the educational program, some sort of independent examination of the applicant for licensure could be seen as a reasonable approach to protect the public health and safety.

The result of this system of dental licensure in the United States was described in a report by the Office of the Inspector General of the Department of Health and Human Services. Including the District of Columbia with the 50 states, 17 of the 51 dental boards gave their own examination, a figure which is unchanged since 1980. The other 34 boards participated in one of four regional tests. Only 19 of 51 dental boards issued licenses by credentials. Of these, 11 issued them to dentists from all states while the other eight exercised some kind of limitation. Half of the 32 boards that did not issue licensure by credentials participated in one of four regional testing services. These boards will license dentists who passed the regional examination but this generally must be done within five years of passing the examination.

If the European experience is used by those in the United States who seek to remove restrictions on the movement of dentists in this country, one of the primary areas on which to focus is the comparability in the quality of dental education in American dental schools. In this regard, the role of the Commission on Dental Accreditation in assuring standards for predoctoral educational programs would be of critical importance. The Mission Statement of the Commission states that it "serves to ensure educational quality" and that "Quality education ultimately leads to quality dental care for the public." If the work of the Commission is viewed as having achieved a uniformity in educational programs that, in the words of the EEC, results in a "comparably high demanding standard of training of dental surgeons," an independent examination to protect the public health would not be necessary and licensure by credentials could be based on graduation from an accredited school of dentistry. For those who seek to achieve free movement of dentists as found in Europe but who also believe in the necessity of a separate examination after graduation, an alternative would be to focus on developing a standardized examination so that each state would accept its results.

An important lesson to be learned from the events in Europe is that major changes affecting particular groups such as the health professions can come about as a result of larger social policy changes rather than by changes desired or made by the health professions themselves. In Europe there was no movement within the health professions to change how they were licensed. The larger soci-
tial goal that was being sought was an improvement of the economic situation within the community. Freeing markets was seen as the mechanism to achieve that goal. In the negotiations to determine how free markets were to be achieved, it would not have been politically possible to exempt certain categories of workers or industries. For example, agriculture, which in many countries receives some form of government support, posed extremely complex questions and continues to be the subject of intense debate. In this context, free movement of health professionals could be seen as a relatively simple matter to resolve.

If, as in Europe, the driving force for change in America is likely to come from forces outside the profession, it is possible to identify several forces which might affect licensure. First, the general political view in this country is that elimination of restrictive government regulations (deregulation) should be vigorously pursued. Although this view could change as a result of negative outcomes perceived to result from deregulation such as the savings and loan debacle, pursuit of competitive markets has historically been a fundamental economic precept in America. The political goal of promoting competition wherever possible so that market forces can work to make goods and services more readily available and at a lower cost is likely to persist. This is the same argument as the one which is driving the EEC.

The free market argument will have particular impact if legislators think that the reason for restrictive state licensing laws is to avoid competition. Of note in this regard is the statement in the report by the Inspector General that "... much of the general public may also have good reason to be concerned about restrictive State board policies in licensing dentists already licensed in other states." The report pointed out that of the 17 Boards that require applicants to pass a state clinical examination, 13 are in states where the ratio of active dentists is less than the national average. Such findings support the position that market forces such as free movement of dental care providers are needed to control costs and increase access to care.

Changes in the composition of the dental work force may also exert pressure for change. In 1980, there were 370,000 two-career households with a family income of $75,000 or more. By 1987, this figure had increased to nearly 3.3 million. In dentistry, there were 3,500 women dentists in the United States in 1980 and this number increased to 9,000 in 1986. Given the proportion of women enrolling in American dental schools, the number of women dentists is expected to reach 25,000 by the year 2,000 and 43,000 by 2020. Many of these women dentists are likely to be part of the geographically mobile, two-career families who will demand less restrictions on their ability to move.

Third, public concern about quality of care and developments in quality assurance might provide a rationale for reducing the role of an initial licensure examination. The public demand for continued competency is likely to follow from grave outcomes which received widespread media attention. In California, for example, public concern about deaths associated with administration of general anesthesia and conscious sedation has contributed to changes in the dental practice act which require that every dentist using these forms of anesthesia "shall have an onsite inspection and evaluation at least once in every six years." Similarly, recent reports of possible transmission of HIV from a dentist to his patients could lead to reduced confidence in an initial licensing examination to assure patient safety compared to on-going evaluation of dental practices. With the techniques being improved for measuring quality through such mechanisms as on-site inspection of dental practices, a case could be made for using this method to assure quality of care on an on-going basis rather than a system which relies heavily on initial licensure with limited surveillance thereafter.

The mechanism for achieving change in Europe was the Council of Ministers of the European Economic Community which acts mainly on proposals from the Commission of the European Communities. The Commission, in turn, is answerable to the 518 member European Parliament whose members are elected in each country for a term of five years. In the United States, change could occur on a state-by-state basis, through action of the Congress, or through the courts. As described above, there has been no increase in the number of states which grant licensure by credentials and the number of states participating in regional boards did not change from 1980 to 1987. It is unlikely, therefore, that all individual states will initiate change, especially those states that administer their own licensing examination.

The Congress, if it so chose, could take action on its own. Under the interstate commerce clause of the Constitution a reasonable legal case could be made for bringing the state practice acts under one commission or authority since it would be virtually impossible to claim that any health care practitioner is not engaged in some aspect of interstate commerce.

A likely mechanism for change is the court system. The Fourteenth Amendment which includes the due process and equal protection clauses of the Constitution could be cited. Another constitutional argument that could be used is based on Article IV which states that "The citizens of each state shall be entitled to all privileges and immunities of citizens in the several states."

Summary

The formation of the European Economic Community is resulting in historic changes. By the end of 1992, the European Community is
expected to be operating as a single market of more than 320 million consumers, the largest in the world. The fundamental assumption underlying the creation of the European Community is that the best method to increase the general prosperity is a free market. The free market included services as well as goods and required the elimination of restrictions on the movement of people, goods and services among the 12 nations. In dentistry, this has already meant the elimination of licensure restriction for dentists in good standing who are citizens of the EEC and trained in approved educational programs within the EEC, but commercial barriers still remain to be eliminated by the end of 1992.

The events occurring in Europe indicate that the outcome of the controversy regarding movement of dentists among states in the United States will be determined by larger societal considerations outside of the profession. The free market principle which underlies the changes in Europe is the fundamental economic philosophy in the United States. To the extent that limitation on the movement of health professionals is seen to contribute to higher costs for health care services in the United States, there may be increased efforts to license by credentials. Similarly, factors such as the need of families for greater freedom of movement between states and court challenges based on constitutionally protected rights may determine the outcome of licensure of dentists rather than issues which are of concern within the professional dental community. Δ

References

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A PROFILE OF WOMEN IN DENTAL EDUCATION

Jane P. Casada*  Leslie B. Roeder**  Janet A. Harrison***  J.G. Cailleteau****

Introduction

Although the number of students enrolled in United States dental schools has decreased in the last decade, the number of women entering the traditionally male-dominated dental profession has increased dramatically.1 In 1969, women comprised 1.2% of the first year dental class.2 By 1984, one in four dental students was a woman,3 and in 1987, the enrollment of women increased to 32.4% of the entering class.2 Women are now represented in every dental school in the nation. This pattern of more women entering dentistry is continuing.1

In contrast, women dental educators comprise a small percent of the dental school faculty. In 1970, 6.9% of all dental faculty were female, but by 1980, ten percent of the faculty were female.4 A 1987 report showed women comprised less than twenty percent of dental school faculties.5 Why are women under-represented in dental education as suggested by Dr. Enid Needle? Various answers have been suggested including low salary, few female administrators and a lack of role models.5

The purpose of this survey was to collect and evaluate information pertaining to the academic careers of female dental faculty. This information will help to assess the status of women in dental education and provide answers to questions concerning salary levels, promotion and tenure, and mentors.

Method

The target population of the survey was female faculty members who have received a dental degree (D.D.S. or D.M.D.) and whose teaching responsibilities were directed toward the predoctoral or specialty programs. An overall listing of female faculty members in dental education was unavailable. An initial letter was sent to the deans of all of the U.S. dental schools requesting a listing of the faculty which were in the target population. Surveys were sent to all of the names that were received. These faculty members could be full-time or part-time. Surveys were sent with an addressed return envelope. No follow-up survey was sent. Several areas were addressed on the survey. Demographic data included age, race, and educational levels. Other areas addressed were academic rank, salary ranges and tenure status. Several questions were related to the presence of mentors and role models in their academic setting. This survey was designed to gather information related to the academic careers of female dental faculty members. Opinions were sought from female faculty on a number of questions.

Those questions asked for “feelings” concerning availability of mentors. Some questions were unanswered, therefore total respondents for some questions vary. Responses were obtained from all four regions of the country.

Results

Surveys were sent to 996 individuals, with a response rate of 46%. The total number of surveys returned was 374, with full-time respondents numbering 192 and part-time and 182. Respondents who did not have a D.D.S. or D.M.D. numbered 86. Data from these individuals are not included as they were not the target population.

Demographic information was sought through the survey. The age of the respondents was expressed in ranges. Sixty percent of full and part-time faculty members fell in the 31 to 40 age brackets (Table 1). The question of marital status re-
revealed that sixty-four percent of the respondents were married, twelve percent were divorced, twenty-four percent were single and two individuals reported being widowed. The survey also asked if they had any children. Forty-two percent of part-time respondents reported having children, as did forty-six percent of full-time faculty members. The respondents were primarily Caucasian, however some minority representation was seen by response from Black (16), Hispanic (13) and Asian (21) individuals. Educational levels are presented for full and part-time faculty in Table 2.

Academic rank for full-time and part-time is represented in Figure 1. Full-time respondents were primarily of Assistant Professor rank, although representation of all categories was shown. The majority of part-time faculty members were either of Instructor or Assistant Professional rank.

Salary ranges for full-time faculty are presented in Figure II. Salary as related to academic rank for all respondents is illustrated in Figure III. Eighty-five percent of full-time faculty members engage in some form of private practice.

Table 3 presents a break down by hours of time.

One hundred and nine full-time respondents felt that they had a mentor. Most mentors were males although several noted that both males and females participated.

Eighty-two respondents did not feel a mentor was available.

Discussion

The profile of the woman educator of this survey is that of a rela-
Table 3. Hours of Private Practice by Full-Time Female Faculty Members*

<table>
<thead>
<tr>
<th>Hours of Practice/Week</th>
<th>Number of Respondents</th>
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*Includes hours reported both for intramural practice in the dental school and hours practiced outside the school.

The response rate to this survey was 46%. The relatively low rate was due in part to the lack of a follow-up survey. Also, some surveys, especially those involving part-time faculty, were returned. This could indicate that the addressee was no longer at that address and perhaps no longer involved in academia. Finally, some surveys were inadvertently sent to those without D.D.S./D.M.D. degrees, and therefore, may have been disregarded due to the wording of the cover letter which specifically asked for only dentists to respond.

In response to the survey, a number of women noted that they had specialty degrees: fifty-three percent of the full-time and forty-eight percent of the part-time faculty who responded. This large percent-
age is in keeping with the academic environment. This percentage is also to be expected as 21% of the total practitioners in 1982 were specialists and a continuing increase was projected.7

The salary range for all combined data reported showed that the majority of women were ranked at the Assistant Professor level and received from $40,000 to $44,000 annually (Graphs 2 and 3). This is consistent with data received from the AADS Faculty Salary Survey8 showing that Assistant Professors salaries for clinical science departments range from $37,000 to $48,475 (25% to 75%) with the median being $41,500. In fact, at all academic ranks, women's salaries fell within the ranges given by AADS and closer to the median than might be expected from the low number of women faculty compared to women dentists available to fill positions. Also, with regard to salary equity, part-time faculty decidedly agreed that they received equitable salary with men. Full-time faculty, however, were equally divided on the issue, leaving room for an ambivalent feeling on the part of women regarding financial security in an academic setting. It should be noted that a large percentage (85%) of the women do engage in private practice, presumably in part, to supplement their income.

On the issue of promotion and tenure, most full and part-time faculty agreed that there was equity on the basis of sex with an overwhelming majority of full-time faculty agreeing on the tenure question. Therefore, possibilities of advancement and educational security do exist and should not be problematic in decision making concerning career choices. In addition, with regard to career advancement, more part-time faculty seemed to be aware of women in administrative positions. However, the majority of all women faculty were cognizant of female administrators. Of the respondents (full and part-time) 13.7% were administrators: Associate and Assistant Deans, Chairpersons, Program and Clinic Directors, etc. The list included almost every position except Dean of the dental school. It was encouraging to note that women were holding administrative positions outside the realm of those traditionally considered "female" roles such as Director of Dental Hygiene and Assistant Dean of Finance. Therefore the future for advancement of women in dental education would appear to be bright.

Finally, a very important aspect of job satisfaction and perception of a rising career is the fear of "getting started" in a career and continuing to be successful.9 It is necessary in many work situations, particularly in academia, to have someone to take an interest in the fledgling educator and help develop talents and build self-confidence. This role falls to the older, more advanced mentor. While equally divided between having and not having a mentor, only 16% of those who did have a mentor had a same sex mentor. It, therefore, becomes important for all women already in dental education to encourage and support those female students who may be good candidates for academia. It will be necessary, due to current low numbers, for one woman educator to mentor several others in order to increase their numbers in the future. Given the salary figures and current perceptions on other issues, perhaps an increase in women dental educators, important as student role models, may be anticipated and the profile of the women educator will see a continuing shift to the older, more experienced dentist.△

References


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THE AGING POPULATION
FUTURE OF DENTISTRY—

KEYNOTE ADDRESS

Eugene J. Truono, Moderator*

We need to be challenged on the subject under discussion here today.
An enormous demographic shift is occurring... and it will have a profound effect on the very nature of our society and the very nature of dental practice.
We need to think about and understand this change—because it offers us new opportunities, and because it makes new demands of us.
Three simultaneous demographic shifts are taking place in America today.
These changes are the senior boom... the birth dearth... and the aging of the baby boom generation.
Americans are living longer and better than ever before.
In 1776, when the Declaration of Independence was signed, the average lifetime expectancy was 35 years.
Since then, the average life expectancy has shot up to 75 years.
The major factor contributing to this increase in longevity has been extraordinary breakthroughs in health care.
We learned about germs. We learned about sterilization and immunization. And we discovered antibiotics.

Most recently, we introduced health promotion. Life expectancy will continue to increase—because people today are more aware of the role that nutrition, exercise, and lifestyle play in their well-being.
Increased life expectancy has created a tremendous growth in the number of people in America who are over 65.
In 1880, there were only about 2.4 million people over 65. Today, there are 30 million.
People over 65 make up the fastest growing segment of the American population. It's growing nearly twice as fast as the general population.
Think about this: it has been estimated that two thirds of all people age 65 and over who have ever lived are alive right now. And this is a group that is continuing to grow.
Add to this the fact that the birth rate has markedly declined. On the average, American couples had 3.5 children at the height of the Baby Boom. Today, that's gone down to 1.8.
The senior boom and the decline in the birth rate alone would be enough to shift America's center of gravity from youth to the second half of life.
But there's one more demographic event we have to consider... and this one raises the shift that's occurring to the level of a major cultural quake.
On January 1, 1996—at one minute after midnight, to be precise... and this one raises the shift that's occurring to the level of a major cultural quake.
A woman named Maureen Casey—who was the very first American born during the baby boom—is going to turn 50.
And all the other baby boomers will be coming along right behind her.
Between 1946 and 1964, Americans made 76 million babies. Talk about a time of industry.
That's a third of the population. At any other time in American history, including now, from 25 to 40 percent of American couples have been childless. During the Baby Boom years, only eight percent were childless.
With this huge population turning 50, the center of gravity in this

*Eugene J. Truono, President 1990–1991 American Dental Association
A Presentation at the ACD Symposium in Boston, October 12, 1990
country will complete the shift to the second half of life.

We have always defined youth as "in" and old age as "out." All of that will be redefined as a large population bloc—one with a strong sense of identity and power—moves into the golden years.

Because of improvements in health care—and because of increased public awareness of healthful lifestyles—the vast majority of the people in the Senior Boom are going to be in good health.

And they're going to be interested in maintaining their health. They're going to want to feel good . . . look good . . . and enjoy themselves.

It was the baby boomers who first benefited from the amazing progress we've made in fighting caries. They're not only going to grow older than people used to grow—they're going to keep their teeth, and they're going to want to take care of them.

They're going to have a standard of living and a degree of discretionary income that allows them to take care of themselves . . . and to pamper themselves if they want.

77 percent of all financial assets in the United States are held by people over 55. They hold 68 percent of all money market funds and 80 percent of all money in savings and loans institutions.

Three quarters of them own their own homes, and 84 percent have paid off their mortgages.

All of this is good news for the future of dentistry.

When I had the privilege of giving the commencement address at the University of the Pacific School of Dentistry in June, I was able to talk about this good news.

I was able to tell the graduating seniors—one of whom was my son—that the demand for their services and talents would grow throughout their careers.

I cited for them an encouraging 1989 study done by one of today's panelists, Chet Douglass, in collaboration with John Reinhard of the University of Iowa.

This study points out that between now and the year 2030 the number of teeth needing proper care in adult Americans will increase by approximately one billion.

The positive implications of this phenomenon for dentistry are obvious—especially since we're talking about a group of people who, on the whole, are health-conscious and have greater discretionary income than the general population.

There is another aspect to the aging of America, however.

Although most seniors will enjoy bodily and financial well-being, the fact of the matter is that some will not. As a caring profession, we must take this into consideration and make certain that everyone's needs are met.

As President-elect of the ADA, I would like to briefly go over for you some of the Association's efforts in behalf of the medically compromised, institutionalized, and financially disadvantaged elderly.

The Association's basic philosophy in this area was formulated with the adoption of our Access Program in 1979.

The elderly were one of several population groups the program identified for special attention through voluntary programs sponsored by individual dentists or dental societies.

We felt strongly—and we continue to feel strongly—that appropriate oral health care benefits should be included in various government and private sector programs.

But we knew that the pursuit of meaningful oral health care benefits for this population could be long and difficult—and we saw voluntary programs from within the profession as a way to reach out to those who have a real and current need.

Eventually, the important role of oral health in total well-being must be recognized. We, as a profession, must work together and see to it that this recognition comes about.

We must make the public . . . and the policymakers for the public . . . understand the importance of regular professional oral health care and daily oral hygiene.

The Association is providing strong leadership in this area.

We have sponsored three national conferences on geriatric...
dentistry since 1980... and two national conferences on special patient care. Larry Meskin keynoted our first special patient conference in 1989.

The Association works closely with national advocates for the elderly... such as the American Association of Retired Persons and the National Council on Aging.

We make extensive patient education materials available... and this coming year we will observe the fifth anniversary of the ADA's National Senior Smile Week.

The importance of oral health care for elderly persons is a key element in Smile, America—the Association's ongoing public awareness program.

The Association has long provided support to the National Foundation of Dentistry for the Handicapped. Thousands of elderly patients are treated each year through the Foundation's programs.

We have closely followed the implementation of the Nursing Home Reform Act, which was part of the Omnibus Budget reconciliation Act of 1987. Regulations under this act were to go into effect this month.

The oral health of nursing home patients is a major concern of the Association... and we applaud the Nursing Home Reform Act's intent to provide these patients with a higher level of oral health care.

It must be said, however, that the Act is very vague as to how this improved care is to be accomplished... and the Act fails to create any new funding resources to pay for such care.

Our Council on Community Health, Hospital, Institutional and Medical affairs—along with our Washington Office—will continue to be closely involved in this issue.

Public policy is an important factor in addressing this issue—but I would like to state my sincere belief that the most important factor is to be found in our own unity as a profession and our commitment to the American people.

The number one factor in addressing this issue is to be found in our own hearts—in our concern for the people we serve... in our recognition of our public responsibility... and in our willingness to go that extra mile, as we have always done.

As I've traveled throughout the country this past year, I've talked about a concept for building our professional unit and passing this sense of professional commitment to the new generation of dentists.

They, after all, are the dentists who will experience during their careers the demographic shift we're discussing today.

I'd like to close my remarks by briefly explaining this mentoring concept.

When I was getting started in practice, I benefited more than I can say from the example, help, and experience of a role model and mentor.

I would like to see the advantages I enjoyed as a result of this relationship extended to all my young colleagues today... as they enter careers in dentistry in these changing times.

I would like to see a system in which established and experienced members—including some of us who preceded the Baby Boom—would serve as mentors to recent graduates.

I see a program of this type as a major step forward in building our professional unity. It can create a sense of bonding and partnership—instead of possible rivalry—between young dentists and established ones.

More important—I see mentors as part of the professional continuum... the passing of the baton.

I see mentors as a means of assisting young dentists in meeting the challenges we're discussing today... and other challenges of the 1990s and the new century ahead.

Once we are established in our careers and successful, we can't always pay back those who made it possible. We can't always pay back our parents or teachers... or even our own mentors.

There are two things we can do. We can be good dentists... and we can pass it on as it was passed on to us.

And even as we're passing it on to a new generation, we can learn from that generation.

What matters is that dentists—from recent graduates to those with decades of experience—continue to give all Americans—from children to senior citizens—the finest oral health care anywhere in the world.Δ
Introduction

Dr. Eugene J. Truono has presented the fundamental trends regarding the growth in the number of older adults that we have already begun to see in the United States. He has also shown that this growth will continue for some time to come. There are three basic points I wish to make about these basic demographic changes in our society:

(1) The increase in the number of older adults is enormous. The number of older patients that dentists now see in their practices is only the beginning. The number of older adults will grow substantially over the next two decades and then in 2020, when the baby boomers become 65, this growth rate will accelerate. Thus, this trend will be with us for the next half century.

(2) The size of the entire population of the United States is growing substantially. We are at exactly 250 million people at present, and in the practice lifetime of the graduating dental student today, we will increase to over 310 million people. That is approximately a thirty percent increase in the number of people in the United States during one dentist's practice career.

(3) This growing population will exhibit an increasing amount of cultural diversity. What was predominantly a Caucasian, Anglo-Saxon majority in the 19th and 20th centuries in the United States will emerge into a population of 300 million in which 100 million or more will be comprised of what used to be called minority groups, i.e., Asian Americans, Afro-Americans and Hispanic Americans. The size of other minority groups will also increase. Thus, this trend will test our ability to provide dental care to an increasingly diverse population which may hold different values and cultural expectations.

Trends in Dentistry

Leaving aside for this paper the trends in the organization, financing and delivery of dental services, the trends related to the aging population that will have an effect on the dental curriculum will be reviewed. These trends are (1) changes in the epidemiology of dental diseases, (2) changes in patients' perceived need for dental care, and (3) changes in dental care technology and standards of care that are being taught in dental education.

Trends in Dental Disease: The most obvious trend is the increasing number of teeth that will be maintained by older patients. Reinhardt from the University of Iowa and others have estimated the number of teeth that are at risk to dental disease in the next forty years. Reinhardt calculates that there were 2.8 billion teeth in the entire population in 1980 and projects that there will be 4.4 billion teeth by the year 2000 and more than 5 billion teeth by 2030. He adds that these projections may be conservative due to underestimations in some assumptions related to population growth such as immigration and life expectancy.

The next question is whether this enormous number of teeth will also demonstrate an increase in the need for dental treatment. Our research team at Harvard School of Dental Medicine has concentrated on this question and has produced a series of publications over the past six years that have looked at the implications for operative dentistry services, prosthodontic services and periodontal services. These analyses have shown: (1) the DMFT for older adults has not declined and is apparently slightly higher for older adults than younger adults; (2) longitudinal study data suggest that adult men
60 years or older are experiencing a caries incidence rate that is higher than younger middle aged men;8 (3) the unmet need for operative dentistry services will increase by 53 million hours while the unmet need for children’s operative dentistry will decrease by only 17 million hours.2 Thus, the decrease in need for children’s operative dentistry will be more than replaced by an increase in need for adult operative dentistry.

A similar analysis has been carried out for the Federation of Prosthodontic Organizations and was reported in the September 1990 issue of the Journal of Prosthetic Dentistry. The projected need is expected to increase by 37 percent over 1975 levels3 by the year 2000. More recent data that are based on the 1985–86 NIDR Employed Adults Study show that approximately 45 percent of the 35–55 age cohort (who will be dental patients for the next 30 to 50 years) have tooth loss patterns that are consistent with the need for either full dentures, removable partial dentures or fixed prosthodontic appliances.9 Thus the aging of the population appears to be having significant impact on the increased need for prosthodontic services in the future.

Perceived Need: The perceived need for dental services has increased over the past 25 years. The World War II generation was told that they would lose their teeth at age 40. Early baby boomers were told that you could save your teeth by going to the dentist to have your cavities filled. Today’s youngest generation has been taught that you can protect your teeth against tooth decay. In general, there is an increasing appreciation for dental services and oral health across the generations and increasing awareness that restorative and preventive dentistry improves the quality of life of most Americans.

Effect on Dental Services

Population and disease trends combined will have an effect on the types of dental services that will need to be emphasized by the dental curriculum of the 1990s and 21st century. I will summarize my views as presented in the November issue of the ADA Journal and present “best guess” directions of change, along with the logic for believing those changes for each of the nine basic types of dental services will take place.

Diagnostic Services: Because there will be more teeth and more teeth per person and more older people with teeth, dental educators will need to pay greater attention to the diagnosis of dental diseases and coexisting chronic systemic conditions.10–13 There is a series of new diagnostic technologies being developed by dental manufacturers and dental supply companies that will improve our ability to diagnose smaller increments of dental caries and periodontal disease at earlier stages of development.14–18 In addition to these technological changes, the health care delivery system is moving towards managed health care programs which will encourage routine diagnosis as a cost containment feature of the benefit plan.19 Hence, the general trends in population, disease patterns, managed medical care and technological developments all suggest that greater attention within the dental curriculum will have to be paid to diagnosis.

Preventive Dentistry: In viewing the oral health of children and adolescents in the United States, we have an entire generation who is experiencing significant decreases of dental caries and many of them are experiencing no caries at all. These successes, coupled with the general attitude towards health and fitness in society, suggest that preventive services will be a growing component of dental care that is appreciated by a larger and larger sector of the society. Prevention works,20 and an entire generation has shown a willingness to pay substantially for it.

Oral Surgery: The basic trend in oral surgery is that there have been fewer and fewer simple extractions over the past two decades. However, one would expect that third molar extractions would be a steady market for oral surgery services as long as the extraction of impacted third molars is covered with some kind of dental or medical insurance. With regard to more complex oral surgery, while the facts are not completely in, it would seem that implants and maxillofacial surgery are more important in the oral surgery practice than they had been one generation ago. General practitioners have largely gotten out of the business of providing extractions and other oral surgery procedures.

Operative Dentistry: The basic trend in operative dentistry is that the need for children’s operative dentistry will decline while adult operative dentistry will increase.2 This change will occur because of increasing numbers of teeth at risk to dental caries in upper age groups. In addition, there is an increase in the number of retained fillings in older adults that are at risk of fracture or recurrent decay. A third reason to expect more operative dentistry for older adults is that for those adults who have been able to maintain decay free surfaces during their young and middle adult years, there will be more virgin tooth surfaces at risk to primary carious lesions. A fourth area
is, of course, root caries where there will be an increasing number of root exposures at risk to dental caries. In summary operative dentistry should be expected to increase substantially for the older patient population. As stated earlier, this increase is expected to more than account for the decrease in need for children's operative services.

**Fixed Prosthodontics:** Fixed prosthodontic services increased dramatically during the 1970s and 80s after the advent of high speed rotary instruments. With the retention of more posterior teeth in the upper age group of patients and the missing tooth pattern that is consistent with the need for fixed prosthodontic services, it seems clear that the need for fixed prosthodontic services over the next 30 years will increase for older adult patients. One additional factor is the potential increase in use of dental implants which would create cases of fixed prosthodontic services where it had not previously been possible to provide such an appliance.

**Removable Prosthodontics:** As the percent of edentulous adults declines from the present 33 percent level to a projected 25 percent or to hopefully as low as 15 percent, one would expect fewer cases of full dentures. This, in fact, may not occur because of the increase in the denominator of older adults; that is, 33 percent of 27 million older adults is roughly 9 million people in need of full dentures. By the year 2020, we will have 64 million people over age 65. If only 15 percent of those people are edentulous, that would still leave approximately 9 million older adults who will need full upper and lower dentures. The problem is that it will appear that there are fewer adults who are edentulous because, instead of one in two older adults being edentulous as was true a generation ago, we are moving toward one in four or perhaps even one in five or one in six persons being edentulous by the year 2020 or 2030. Then, this group will appear less numerous and be harder to bring into dental education institutions. They will also have less money as they will probably be lower income patients who had not routinely sought dental care during their lifetime.

**Periodontal Services:** Unfortunately, history has shown that there is a low demand and low payment schedules for periodontal services. Two percent of dentists' time was engaged in providing periodontal services in 1977. Today the ADA confirms that only 4.5 percent of dental services are for periodontal treatment. I would expect that this percent of practice will not increase substantially over the next 10 or 15 years. The diagnosis for advanced periodontal disease is, in fact, controversial and presently many companies are developing diagnostics that will enable dentists to identify earlier forms of periodontal disease. If and when these diagnostics are fully used in practice, we may see some shift in increased periodontal care. However, think that the payment for those periodontal diagnostics will be related to dental insurance plans which are probably inclined to be conservative in their reimbursement policies.

**Orthodontics:** The demand for orthodontics has historically been driven by the number of 12 year olds in the population. However, since the development of techniques that are applicable to adults it would seem that there is no lid on the theoretical need for orthodontic services. In addition, the trend in the number of 12 year olds in a few years will turn around and begin to increase. These demographic trends coupled with the high values that straight teeth are given in our society should almost guarantee a continuing demand for orthodontic services for many years to come.

**Endodontics:** Endodontics has tended to be related to the delivery of complex restorative services, primarily crown and bridge, and hence has increased as a percentage of dental practice over the past two decades. If complex operative dentistry and fixed prosthodontics are expected to be delivered to adults of upper age group categories, it would seem that endodontics should be expected to increase for these age groups also.

In summary, over the next several decades it would seem that practicing dentists and dental educators should be prepared to provide increased attention for diagnostic, preventive, adult operative, fixed prosthodontics, endodontic and orthodontic services. At the same time, practicing dentists may find that children's operative dentistry and extractions will present less frequently than in the past. With regard to complete dentures, while the same number of people in the United States, approximately 9 million, will be edentulous over the next 30 years, it will appear that this is a smaller proportion of society and thus be de-emphasized in the profession's mind. How these trends might affect the dental education system will now be considered.

**Effects on Dental Education**

Dental schools will feel the impact of the aging population in several important ways: More time
and consideration will have to be taken in obtaining the patient's medical history. The most common causes of death over the age of 60 are cardio-vascular diseases, cerebro-vascular disease, chronic obstructive pulmonary conditions, malignant neoplasms and diabetes mellitus. Episodes of these conditions can possibly disrupt dental services being delivered by the school. Other precautions will be necessary such as the avoidance of epinephrine, tissue retraction in cardiac patients or the pre-treatment with antibiotics for older patients with certain cardio-vascular conditions. Regarding patients who are receiving radiation or chemotherapy, stroke patients who are experiencing long term treatment processes or pulmonary patients who have difficulty in presenting themselves for dental care, dental students and faculty will be required to learn how to modify their patient care techniques in order to provide appropriate services for these chronically ill patients.

A second area in which the aging population will impact on the dental curriculum is the area of clinical requirements. The tooth retention and disease pattern changes in the older population will result in the presentation of clinical cases that have historically been less common in dental school classes. One obvious change is that certain patients will be presenting with much more sound tooth structure than previously existed; and carious lesions may appear smaller, requiring more conservative cavity preparations and restorations. An opposing trend will be that the retained teeth of many older patients will have large complex amalgam restorations that have already been replaced once or twice throughout their lifetime and will require extensive complex restorations that may also include caries associated with root surfaces. In general, it would seem that operative dentistry procedures related to the older population of patients will become more complex over the next 25 years, and that classical cavity preparation designs as traditionally taught will be less and less frequently provided in the dental school clinic, thus requiring a shift in what is required of dental students. Related to these complex treatment plans may be an increase in implants that are prescribed and placed by dental students. It will be interesting to see when the first dental school changes its clinical requirements for graduation to include experience in placing dental implants.

A third area of change that we have already begun to see is in the provision of restorative dentistry that does not treat dental caries, but rather falls in the category of esthetic dentistry. To what extent will the provision of anterior and posterior composite restorations and bonded veneers, which are placed for esthetic purposes only, increase in required in dental education? It would seem that, if the practice of dentistry requires these skills, dental education ought to teach them.

A fourth area of possible change in clinical requirements will be in the area of diagnosis and treatment planning. Because of the increasing diagnostic complexities of older patients and the larger variation in need for services across patients, diagnostic tools will be developed that will require dental students to become more familiar with risk assessment in their patients. Identifying patients as high or low risk to various dental conditions in the future could become a routine requirement in dental education. High risk behaviors may also be included. For example, for patients who smoke, I would expect that dental students will become required to present them with smoking cessation treatment methods. I would expect that this information on risk assessment would become a requirement for presentation to the patient at the case presentation so that the students can inform their patients of the alternatives for their treatment and the likelihood of success of the various alternative therapies. This requirement would engage patients in a more meaningful way in the decision to proceed with various courses of dental treatment within the school. This type of case presentation would be distinguished from presenting the so-called "optimum" treatment plan or "alternative treatment" plan as we have known them in the past.

**Pedagogical Methods**

A key change taking place in dental education today is the increasing realization that the knowledge base has become so large, and the development of new knowledge so rapid, it is impossible for each student to end up knowing all the facts. Knowing all the scientific and clinical information needed for a career in dental practice is virtually impossible. So how are we to teach this increasingly expanding body of knowledge, a knowledge base that is now becoming more complex due to the aging population of patients? And how can we possibly do it within the same four year period that has been allotted for the curriculum? The answer is, we cannot. And one partial solution to the dilemma is to change the focus of dental education from learning facts to learning how to solve problems. Instead of memorizing scores of pieces of information and regurgitating them on an examination (at least to the point of
knowing 70 percent), the educational goal should be to learn how to: (1) identify a problem, (2) clearly delineate the issues related to that problem, (3) find information that can help solve the problem, (4) make a decision regarding an appropriate solution and (5) apply that solution to patient care. Thus, we will be moving from knowing a finite number of answers to knowing how to ask relevant questions; and from mastering one clinical technique to having the ability to evaluate new devices and techniques that appear in the market almost daily.

Related to this problem is the final task after graduation of passing state licensing examinations. There is a substantial and increasing mismatch between state licensing examinations and the content of dental education. As we move toward teaching basic skills and problem solving abilities this mismatch may become even larger. This is a substantial problem that must be addressed by cooperative efforts through licensing boards and dental educators. Garland Hershey,28 writing in the Journal of Dental Education in 1986, identified two of the major impediments to curricular change. He states that fear of uncertainty of the outcome favors the status quo, and inertia make it easier to do tomorrow what we have done today. The aging of the patient population will create a major set of pressures on dental education that will force both basic science and clinical departments to change the content and methods of their teaching. I look forward to working with the American College of Dentists as we face these challenges over the next decade. Δ

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The financing of care is an important element when discussing the dental needs of our senior citizens. As we'll demonstrate, their needs are for the more expensive services—and at a time when many are least able to afford them. A couple of years ago, I would have been somewhat more optimistic about the likelihood of expanding the financing of seniors' care by third parties, both private and government. However, due to recent developments in both sectors, it appears to me that the majority of our elders will probably have to continue to pay for their dental services as they do today; that is, by themselves.

Issues. In this paper, I'll try to deal with the following issues/questions:

• Are seniors' dental needs different?
• Can they afford dental care?
• What dental insurance programs are presently available for retirees?
• Why don't voluntary programs work better?
• How does adverse selection affect the cost?
• How would a Medicare Part "D" work?
• What would these programs cost?
• And, finally, what does the future look like?

Utilization and Affordability. Over the years, Delta Dental has developed an extensive data bank on dental services received by employed persons who have dental plans. Included in these statistics are those relatively few seniors who have dental coverage after they retire. To illustrate the changes in services utilized, we have compared the services provided for those 55 and older to all other adults. Utilization shows marked increases in the replacement services and decreases in the preventive-type services. Details are in Figure 1.

To make matters worse, these services tend to be more expensive at a time when most incomes start decreasing. Dental costs for those over 55 are 19 percent higher than for other adults, but income drops rather quickly after age 65, as shown in Figure 2. These data would seem to indicate that many of our seniors cannot afford the more expensive services they need.

Insurance Programs. Insurance programs available for seniors generally fall into one of four categories:

• Group insurance programs covering 2.8 million people 65 or older, including retirees.
• Voluntary insurance programs covering some 1.9 million 65 or older.
• Medicaid, with 809,000 senior eligibles.
• A newly developing concept of individual dental insurance programs, usually financed at least partially through capitation, which transfers the utilization risk to the provider.

As Figure 3 shows, this still leaves 26.1 million (82.6 percent) senior Americans with no financed or prepaid dental benefits.

Voluntary Dental Programs. An easy solution to this dilemma would appear to be: let's develop a dental program which each senior, at his/her option, can purchase. In the insurance industry, we call this a "voluntary program"—to distinguish it from the usual "group" dental program, which is sold only to companies or groups of employees. Alas, the answer is not that easy. Voluntary programs often don't work; and, if they do, they are relatively expensive.

Why? First, almost everyone has a pre-knowledge of what dental services are likely to be needed in the next year or two. When you combine this pre-knowledge with the
usual elective (and postponable) nature of dental services, you create a situation known as "adverse selection." Adverse selection means that primarily those who know they'll be needing the more expensive services will join the program. They'll try to calculate the costs of the insurance against the costs of the needed dental treatment. You can sell this insurance to many —but only to those who probably need it—and use it extensively. Though perhaps this overstates the case, it's much like selling life insurance in an intensive care unit. Adverse selection violates the basic premise of insurance in spreading the risk over a broad population, covering a population where some need the service and some don't, yet all are covered and share the cost.

Adverse selection substantially drives up the individual's cost of a dental program. These costs will be 60 percent higher or more, depending on the design of the dental program. This literally prices the product out of the market for all but those who need—and will get—the most expensive care. To prevent adverse selection, you need to tie the dental program to some other benefit or requirement that has a broad population base and provides a benefit less "voluntary" in nature, i.e., life insurance, hospitalization, etc., and will include both those with urgent need for a program and those without such a need.

**Medicare.** Of course, the one program that brings together the broadest population base of seniors is Medicare. If a Medicare Part "D" (for "dental") would be tied to Part B (physician care), we would eliminate this adverse selection for dental care entirely. Such a program could cover almost 29 million senior Americans for a cost we esti-
FIGURE 3

Coverage of Americans 65 and Older

- Medicaid - 809,000
- Others 65 and older - 1.9 Million (2.6%)
- Labor force and retirees - 2.8 Million (8.9%)
- Without coverage - 26.1 Million (82.6%)

Of 31.6 million Americans 65 or older, approximately 16.1 million are without dental benefits.

SOURCE: Health Care Financing Administration, August 1990
Bureau of Labor Statistics, June 1990

FIGURE 4

How Does Adverse Selection Affect the Cost?

A voluntary plan can be over 60% higher than a group-paid plan, therefore . . .

. . . to prevent adverse selection, tie dental to something with a broad population base.

SOURCE: Delta Dental Plan of California, August 1989

mate at $10–$23 per month. A minimal coverage program would address only diagnostic and preventive services and simple restorations and extractions. A full coverage program ($23 per month) would be similar to most commercial group dental programs. Of course, there are all ranges of benefits, copayments and premium levels between these two examples, all of which affect the program costs.

Comparing Costs. Figure 5 illustrates how some of these programs might vary in monthly cost.

Future. As I stated earlier, a couple of years ago it seemed likely that dental benefits might be added to Medicare. This was after Congress passed and the President signed the Medicare Catastrophic Act. The prevailing thought was that when funds became available, dental benefits were next in line. Admittedly, this may have been a number of years away, but the handwriting was on the wall. Well, I'm sure we're all aware of what happened. The new beneficiaries of catastrophic care rose up in anger over the fact that they themselves were paying for this new benefit. The cost wasn't being spread over the entire population. Congress and the administration beat a hasty retreat and repealed catastrophic before it even got off the ground. Not only is "dental" no longer "next," in my opinion, dental benefits under Medicare are not likely in the near or medium future. (The politicians are understandably gun-shy at proposing another self-pay benefit—as dental care would likely be.)

During the '70s and '80s, many elderly gained dental benefits when their companies expanded their dental programs to retirees. Unfortunately, I believe this trend is now in reverse. The reason for this is that new accounting rules have
been adopted by the Financial Accounting Standards Board that will require that retiree health costs be accounted for in the same manner as pension benefits. That is to say, they must be accrued by the employer during the worker's career—and also, the cost of medical benefits for all current retirees must be added to all corporations' balance sheets. This change will have a very substantial negative impact on many companies, and they'll be phasing in these costs during the '90s. Already, many companies are reducing medical benefits for retirees; it's almost sure they won't be adding new or increased dental benefits.

Perhaps the most promising form of coverage for our seniors is the just emerging concept of tying a dental benefit into a Medigap program. Such a coordination with a medical supplement substantially reduces the adverse selection in the dental program. Senior groups have been slow to add these coverages, but I believe we can expect more of these to be available in the future.

Also, the insurance industry should be encouraged to experiment with various innovative methods of bringing coverage to the elderly. Included among these would be:

- A program which requires waiting periods prior to the coverage of the more expensive care.
- Providing a voluntary coverage for retirees who have had coverage, a so-called rollover benefit which reduces the adverse selection.
- A program which covers major services only, with the less costly preventive and basic services paid by the individual.
- Capitation programs for individuals have shown some promise, but programs must be designed that would protect the risk-taking provider from the adverse selection and the patient from the possibility of receiving less care than needed.

There are undoubtedly many more concepts that are being, or should be, tried. It is unlikely that there will be any single solution to the dental financing needs of our senior citizens. Clearly, many can afford care from their own funds. For those who cannot, it appears that help will not come from either Medicare or company retiree programs. Rather, financing dental care will, to the extent it occurs, come from any number of different sources. Perhaps this is as it should be in a free market system. Certainly, the need is there; when the demand rises to the level of the need, free market solutions will surely evolve.

One final thought: As we continue to consider the dental needs of the elderly, it's imperative that we be sure to include them as part of the planning process—from the beginning. Congress made a big mistake when it adopted a catastrophic program that the elderly did not want to pay for. So, as we move ahead toward solving the financing problems for dental care for the elderly, it will be of critical import that we seek the early and complete involvement of the recipients.

With the cooperation of the elderly consumer/retiree, the dental profession and the third party industry, we can develop, test and implement a variety of programs to meet the financing needs of that portion of the elderly who are unable to finance their own care.△

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Symposium on the Aging Population and Dentistry

THE PERSPECTIVES OF FEDERAL PROGRAMS*

Richard Adelson**

Examining the impact of an aging population on the future of dentistry from the perspective of federal programs, this paper will expand on three points:

- First, that the well-being of today's elderly demonstrate the positive benefits from federal programs and policy over the last 50 years.
- Second, that these same federal actions have intensified the economic heterogeneity of the older population—accentuating the plight of those with limited access to care.
- Third, geriatric dentistry and the dental profession as a whole will be significantly affected by how the country decides to resolve the access problem. The effect will be profound whether or not dentistry is actually included in the resulting health care delivery programs.

Present State of the Elderly

We can best summarize the present state of the elderly by the opening lines of Dickens' A Tale of Two Cities—"It was the best of times, it was the worst of times."

On the side of the good news, the majority of persons 65 and over are healthy, mobile, and secure. Peruse the American Association of Retired Persons (AARP) monthly magazine, Modern Maturity, to see how little today's older person represents the dismal stereotype of the aged as sick and dependent. Our modern retirees are portrayed, not in wheel or rocking chairs, but riding golf carts and frolicking in the surf. And, as I will examine in more depth later, for many elderly their good health and disposable income is accompanied by their own teeth, a desire to keep them, and the funds to afford regular and quality dental care.

Heterogeneity

The enactment of Social Security legislation passed in 1935 and Medicare in 1965 guaranteed virtually every older person a retirement income and unprecedented protection from what could be the enormous expense of an acute illness. These federal programs demonstrated the nation's concern about the plight of the aged and its readiness to use public funds to address their needs. In the ensuing years, organizations such as the AARP exercised their political clout to protect the integrity of these programs and ensure that benefits kept pace with increases in the costs of living. Social Security and Medicare, geared to the needs of the elderly, have swelled to become the first and second largest expenditures in the domestic federal budget.

Kevin P. Phillips, in his new book The Politics of Rich and Poor: Wealth and the American Electorate in the Reagan Aftermath, described who benefited from federal policies over the last ten years, and how.1 Especially kind to the elderly with resources were the reduction of taxes in the highest tax bracket from 70% to 28%, skyrocketing inflation in real estate values, and fattened corporate retirement packages. In addition, elderly bondholders made sizeable gains from high interest charges on the growing national debt.

The Vulnerable Elderly

While federal actions over the last two decades were helping the well-off elderly, they were also heightening the economic diversity or heterogeneity of this population. Writes Phillips, "(these policies caused)...a capitalist blowout—the rich got richer while nearly everyone else paid the price."

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*The views expressed in this paper are those of the author and do not necessarily reflect those of the Department of Veterans Affairs.

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A Presentation at the ACD Symposium in Boston, October 12, 1990.
ing the price were many in the geriatric population.

Examining the growing income inequality, Brookings Institution Gary Burless found that from the late 70's to 1983 the average poor person fell further and further below the poverty line. By 1983, the elderly's mean income, reported the U.S. Bureau of Census, averaged only $12,630 a year, 60% of the $21,060 national mean. Thirteen percent of the elderly were below the poverty level requiring substantial federal assistance. And the resumption of the nation's economic growth after 1983 brought no relief.

Demographers have pointed out that the economic policy of the last decade has not left the middle class unscathed. Quoting again from Kevin P. Phillips, "...even many families with what seemed like good incomes...found it hard to make ends meet...What few understood was that real economic status and leisure class purchasing power had moved higher up the ladder, to groups whose emergence and relative affluence middle America could scarcely comprehend."

Access to Health Care

The economic heterogeneity of the elderly and the structure of health care benefits under federal programs created access problems for a significant segment of this population. Medicare, designed as a system to cover acute care costs either in a hospital or as an outpatient, does not cover health expenses frequently incurred by an older population, the most notable being longterm care.

A 1985 study for the House Select Committee on Aging demonstrates the catastrophic impact of the lack of longterm care coverage, even for middle class elderly. The study found that seven out of ten elderly persons living alone would be impoverished after only a 13 week nursing home stay and a married person would be impoverished after only 26 weeks.

Limited access to health care among the elderly, as for other Americans, can have potentially disastrous consequences for their health and quality of life. Among those with medical problems, the uninsured were found to be almost twice as likely to need supportive medical care, medications or supplies, but not to have obtained them. Freeman and colleagues comparing 1986 with 1982 data, reported signs of a deterioration of access to care by the poor, minorities and uninsured as measured by their use of health services.

Dental Utilization and Expenditures

In dentistry, studies document that the elderly are at higher risk of caries, periodontal diseases, and oral cancer. These oral problems are occurring at the same time there has been a considerable reduction of edentulousness among older Americans. The National Institute of Dental Research's epidemiological study of older adults found 42% of those over age 65 were edentulous. Gains in oral health, however, have been primarily among those that can avail themselves of oral services. In contrast, much smaller gains have been made among the older vulnerable population.

The expenditures of older Americans for dental care are significantly different than their expenditures for medical care. Approximately one third of all health expenditures, one third of fees to physicians, and 80% of nursing home costs can be attributed to those over age 65. Yet, this same population accounts for just 10% of total dental care expenditures.

Consistent with their lower expenditures for dental care, we find 30% fewer people 65 and over have seen a dentist within one year compared to those under 65. The percentage of elderly who have not seen a dentist in 5 or more years is almost 2 and a half times as great as for other age groups. Only 31% of those over age 75 had visited a dentist within a year while 46% have not had a dental visit for 5 years or more.

Yet this lower utilization is not true of all elderly. Dental utilization, as with other health services, is effected by factors that effect the person's ability to afford oral health care. Examining dental utilization by income level, close to 50% of all elders with incomes below $10,000 per year have not seen a dentist in more than 5 years compared to fewer than 18% of elders with incomes over $35,000. Alukian in a column in the Nations Health reported that over 50% of homebound elderly have not seen a dentist for 10 years.

Dental insurance will buffer the financial impact of needed dental services. However, it is primarily an employment-related benefit with relatively few plans continuing to provide this coverage after retirement. One survey found that only about 8% of those over age 65 had private dental insurance for even part of the year.

The Health Policy Debate

Two features dominate federal approaches for geriatric care. One, the widespread agreement that the health care system has fundamental problems that need attention. And two, that fixing the problem is limited by a budget deficit that makes covering current expenditure difficult no less supporting expanded benefits that would include dentistry.

Not many people are happy with the current health care system. A survey by Louis Harris and Associates for the Harvard School of Public Health and the Institute for the Future found that 60% of Amer-
cians believed that the fundamental changes are needed in the U.S. health care system. Almost 30% said that the system has so much wrong with it that we would need to completely rebuild it. 17

Costs of Care

A major cause of the dissatisfaction with the health care system is the escalating costs which seem immune to efforts to dampen the increases. From 1976 to 1987, spending the medical care exceeded inflation by almost 80%. In 1987, national health expenditures were $5 trillion, 11.1% of the GNP. The Medicare and Medicaid programs have grown from $70 billion in 1982 to $111 billion in 1987. Medicare, the fastest growing part of the federal budget, increases each year by 11% to 14%. It is projected that the current rate of spending on Medicare will exceed spending on Social Security retirement and defense after the turn of the century. 18

Health Care Reform

The widespread disaffection with the health care system is also creating unusual partnerships. Industry leaders, in an unaccustomed role, have joined with those concerned about the access problems of the 37 million uninsured Americans, in calling for federal involvement in broader systemwide solutions to health care problems. And no wonder. Corporate outlays for health care in 1988 jumped 20–30 percent for the second year in a row with many small businesses facing substantially larger hits—even after many large companies launched an array of programs to trim the growth of health care costs. Corporate America, spending $140 billion a year for health care, about a fourth of the national expenditure, will emerge as a significant force in crafting changes in the health care system.19

The Unions are also turning to Congress as they feel the brunt of corporate strategies to reduce health expenditures by asking the workers to pick up more of the costs. Richard Trumka of the United Mine Workers said in an interview that "Unless the issue of health care is dealt with on nationwide basis that is satisfactory to the working men and women of the U.S. there will continue to be an ever-increasing conflict in labor relations."20 The conservative Heritage Foundation, joining the liberals, released a book last year, A National Health System for America that called for "A reformed U.S. health care system (which) must give all Americans access to adequate health care services."21

Proposals for Health Care Reform

No fewer than six proposals for sweeping reform of health care have been proposed within the last two years. These range from modifying the current employment-based insurance approach to completely dismantling the entire system.22 One disquieting note in the search for health care reform is the increasing mention of rationing of services. Richard Lamm, ex-governor of Colorado, outraged providers and patients by suggesting that care be withheld from the seriously ill elderly. The Hastings Center Daniel Callahan’s more reasoned proposal for limiting care for the seriously ill has also provoked heated discussion.23 Arnold Relman, former editor of the New England Journal of Medicine, in a recent editorial labeled this question “the health policy debate of the 1990’s."24

Dentistry must be alert to rationing proposals since policy makers often place a low value on dental care. For example, the state of Oregon facing shrinking funds and expanding demand for Medicaid services, has been ranking medical procedures from the most effective to least, according to which save the most lives and improve the quality of life of most people. Quoting the NY Times, “most organ transplants, fertility services, plastic surgery and dental care (were) given a low priority.”25

The Outlook

What is the likelihood that there will be any immediate reform of health care? The news is bad. Simply, Congress and the Administration seem helpless in dealing with a massive budget deficit with little fat to cut. The unwillingness to raise new revenues is compounded by two major expenditures in the short term—the S&L bailout and the Middle East crisis. Paralysis has set in. As I write this paper, federal employees have already been informed that they may have up to 20 days of furlough in order for the government to meet the Gramm-Rudman-Hollings sequestration demands.

And, when Congress does turn to the pressing issues of health care, it will need to skillfully balance benefits with how it will be paid for. For example, Democrat and Republican critics of the heralded Pepper Commission report, released this past March, found the plan’s $65 billion federal price tag, and its lack of attention to how it would be financed, unacceptable in today’s political and budgetary environment.26 27

The heterogeneity of the older population further complicates the problem. USA Today quotes Marilyn Moon of Washington, DC’s think tank, the Urban Institute, who said that the “the elderly are both our richest and poorest . . . it’s difficult to know how to make policies taking both those facts into account.”28

There are also signs that the country is turning away from an unquestioning allegiance to programs that support the elderly. The visible affluence of some elderly is
providing the foundation for the emergence of the aged as scapegoats in American society, bearing the blame for a variety of economic and political frustrations. In fact, many are convinced that the well-off elderly aren't paying their fair share and should bear the brunt of cost containment. When Congress and the Administration released their budget package on October 1, 1990, it included a $95 per year increase in Medicare premiums, which USA Today termed the “deficit deal’s powder keg (that is) blasting open fissures between elderly haves and have-nots.”

On the other hand, Congress, aware of the geriatric population’s lobbying ability, isn’t optimistic about making Medicare reductions more equitable. Congress is stillsmarting from the bruising it received after passing a catastrophic health bill paid for by premium increases indexed to the income of Medicare recipients. The elderly, unwilling to accept a new tax to finance coverage for the entire Medicare population, mounted a massive and successful political attack to repeal the law a year and a half after its passage.

Federal Programs and the Future of Dentistry

With all this said, it should be no surprise that Congress' single-mindedness on cutting costs and services precludes any likelihood of serious consideration of programs specifically for dentistry. In fact, benefits currently in place may be in jeopardy. Although it is tempting to end this paper on a note of pessimism, I believe that, over the long-term, action on health care reform will be forthcoming.

The debate has major implications for dentistry. Federal programs that have provided the elderly with health and security have benefitted dentistry directly. Older persons use disposable income to maintain their quality of life and a healthy, cosmetically appealing dentition has a high priority for them. Yet, given their health and financial vulnerability, any event that reduces their income or raises the cost of health services will effect their spending decisions—including, when and how much dental care they will use. Even the perceived threat of a catastrophic health expense will cause many elderly to harbor their limited funds and delay seeking professional care. It is in dentistry’s interest therefore to actively support health care reforms that will protect high risk elderly regardless of whether dental benefits are part of the program.

Support of general benefits for the elderly will help many. Yet, a group remains that needs dentistry’s attention. The poor elderly’s limited access to dental care is a challenge for dentistry and, I believe, suggests an important leadership role for the American College of Dentists.

The time is right for the profession to change priorities—from removing educational, attitudinal, and behavioral barriers to care, to addressing the financial barriers. Differing from those who believe that the poor have little appreciation for dental care, I believe that this undeserved group would set a high value on these services if they were given a chance to express their views. The College, committed to professional ethics and support for the highest standard of quality dental care, can be a vocal advocate for those who are not being heard in planning the future of health care in this country.

Recommendations

Dr. Lawrence Meskin, in March, 1989 at a conference on the needs of special populations, stated that dentistry needs a battle plan. He recommended a think-tank to develop papers that support policy positions, and most of all to develop coalitions at the national and grass-roots levels. I believe that the ACD can be the convener of such an effort. I would like to suggest four agenda items.

1. Dentistry needs to define and actively support a basic dental benefit package that should be available to all Americans regardless of their ability to pay. These essential dental services, I have suggested, should be confined to those procedures designed to control and treat oral disease and should be inseparable from any comparable package of acute and primary medical care services. We must educate decision makers that oral pain and infection cannot be logically distinguished, for policy purposes, from pain and infection elsewhere in the body. And, no rationing scheme should relegate these services to a lower priority.

2. Advocacy for the dentally underserved needs to be targeted at the local and state level. Medicaid, the sole program at the state level that provides oral care for the poor, is under-funded and confusing. The National Journal reports that state legislators and governors are saying that they can’t wait for federal help against the mounting health care pressures that they’re facing. In the face of federal paralysis, state governments are trying to pioneer solutions to cost and access problems. ACD fellows, in high standing in the community, can lobby for a seat at the table where discussions of the future of state health care is being planned.

3. Research is needed to document the effects of the elderly’s lack of access to oral health. We need demonstrations on how to reduce financial barriers. Two documents will be useful: The “Research Agenda for Oral Health in Aging” produced collaboratively by the National Institute on Aging, the National Institute of Dental Research and the VA, lists high priority research areas in geriatrics. The
NIDR’s “Research in Action Plan” states the need to identify high risk population and their problems with access to care.

4. Prevention—Special attention needs to be given to prevention of oral problems. As in medicine, oral preventive services offer opportunities for cost savings and health benefits. Schneider and Guralnik wrote in a recent JAMA article that, “It is unlikely that . . . projected increases in health care costs will be restrained solely by cost containment strategies. Successful containment of health care costs will be related to our ability to prevent and/or cure those age-dependent diseases and disorders . . . .” The Surgeon General report, “The Year 2000 Health Objectives for the Nation,” released last month, can serve as an excellent place to focus the profession’s efforts for the improvement of the elderly dentally underserved oral health.

Conclusion

In summary, federal programs and policies have considerably improved the health and the quality of life for the older person. These programs at the same time have created greater heterogeneity among the older persons, contrasting those healthy and secure with those who are at high risk of major health and socio-economic dislocation. These vulnerable elderly are joined by other Americans who have seen the cost of care increasing and their access to these services diminishing. The current budget concerns makes any substantial improvement in their access problematic. However, the winds for reform of the health care blow strong and the results will effect the future of dentistry. I urge that the American College of Dentists become involved as helping to give voice to the dentally underserved and as a nidus for professional action.

References

1. Phillips KP. The Politics of Rich and Poor: Wealth and the American Elector-
A seemingly infinite number of practice development and management seminars, textbooks, professional journals and commercial writings for the profession emphasize the need to personalize one's practice activities. "Know your patient", "match your presentations to your patient's environment," "deal with your patient (and staff) in a warm understanding manner," and any number of other suggestions have been offered. And indeed, many dentists have developed family oriented practices which have been more than satisfying to the practitioner, the staff and patients that are served.

But as dentists attempt to maintain their practice in the competitive realities of the 1990s (and expand their activities to numbers of underserved populations) few may be aware of the extent to which the "traditional family" (i.e. dad at work, mom functioning as a homemaker and any number of kids bounding off to school) has been replaced by a changing variety of household arrangements (i.e. all persons who occupy a housing unit).

Variations in dental visit patterns are reported in terms of a number of demographic characteristic, including age, gender, race, income, education of members of the family (i.e. two or more persons residing together and related by birth, marriage or adoption) availability of dental insurance, geographic regions, location of residence (i.e. urban vs. rural) and more recently, in terms of employment status and the use of day centers for senior citizens. Yet, little to no attention has been directed to the effects of changing family arrangements on dental practice.

The following presentation will review some of the dramatic developments in the composition of U.S. households and consider changes that may be necessary to maintain "a family oriented practice."

Is "Married with Children" a Dying Classification?

In 1970, 40 percent of 63 million U.S. households were composed of a "traditional family" (a married couple with children). By 1990, "traditional families" represented only 26 percent of the 93 million households (Figure 1). Between 1970 and 1989, while the number of households increased by 46 percent, the number of married couples increased by 16 percent. During the same period, the number of nonfamily household arrangements increased dramatically; multiple persons by almost 300 percent and unmarried couples by almost 400 percent (Table 1).

In addition, by the end of the 1980s, almost 23 percent of U.S. households with children were single parent families. The U.S. rate of single parent families was well in excess of the rates of many other industrialized countries (Table 2).

The increase in single parent families was reported across racial and ethnic populations in the United States. However, rates of single parent families vary significantly by race and ethnicity. For example, single parent families represented 9.1% of non-Hispanic white households, 21.7% of non-Hispanic black households, and 14.0% of Hispanic households in 1990 (Table 2).

![Figure 1. Percent and number distribution of households: 1970, 1990.](image-url)
United States. The dramatic changes (between 1970 and 1990) for the black populations were most pronounced. In 1990, single parent families increased to represent two thirds of black families with children; compared to 23 percent for white and one third for Hispanic families. More than one half (57 percent) of all black families with children were headed by a mother with no husband present (Figure 2).

But single parent families are not a phenomenon of a particular "part of town." Almost one half of the 6.4 million one parent white families were urban residents in the non-central part of a city. Two million one parent families resided in non-metropolitan areas (Table 3). Indeed, the changes in family structure are occurring in all areas and regions of this nation.

**Table 1. Households by type and percent increase: 1970, 1989 (6)**

<table>
<thead>
<tr>
<th>Type of household</th>
<th>Number 1989 (in millions)</th>
<th>Percent increase 1970-1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>92.8*</td>
<td>46%</td>
</tr>
<tr>
<td>Family:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married couples</td>
<td>52.1</td>
<td>16</td>
</tr>
<tr>
<td>Female householder no spouse present</td>
<td>10.9</td>
<td>96</td>
</tr>
<tr>
<td>Male householder no spouse present</td>
<td>2.8</td>
<td>132</td>
</tr>
<tr>
<td>Nonfamily:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single person</td>
<td>22.7</td>
<td>109</td>
</tr>
<tr>
<td>Multiple persons</td>
<td>4.3</td>
<td>292</td>
</tr>
<tr>
<td>Unmarried couples</td>
<td>2.6</td>
<td>395</td>
</tr>
</tbody>
</table>

* Difference in the total results from rounding.
Note: A household represents all persons who occupy a housing unit.

**Table 2. Percent distribution of single parent households as a total of all household with children by country: 1985-1988 (7)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>14.8%</td>
</tr>
<tr>
<td>Denmark</td>
<td>20.3</td>
</tr>
<tr>
<td>France</td>
<td>10.9</td>
</tr>
<tr>
<td>Germany</td>
<td>13.5</td>
</tr>
<tr>
<td>Japan</td>
<td>5.9</td>
</tr>
<tr>
<td>Netherlands</td>
<td>12.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>16.9</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>12.7</td>
</tr>
<tr>
<td>United States</td>
<td>22.9</td>
</tr>
</tbody>
</table>

Mom is Not Sitting Around and Waiting for the Repairman

During the 1940s, in 70 percent of families, only the husband was in the labor force. There were about three million dual work couples—about 9 percent of all families. But that was another time and another generation. By the end of the 1980s, the "traditional family" arrangement accounted for only 20 percent of all families; dual worker families represented another 40 percent. Families maintained by women who were in the labor force represented 10 percent of all families (Figure 4).

How Can the Changing Family Structure Affect a Family Practice?

In this time of competitive marketing of dentistry, developing and/or expanding an existing dental practice is far more complicated than selecting the "right" location and establishing a "good rapport" with staff and patients. Responding to changed family demographics could play an important role in fostering satisfying and successful management of a family oriented practice.

Practice Location and Hours of Practice

As long as dad worked and mom remained at home, there was a relatively clear-cut difference in selecting the site for an office. If you chose a residential area, mom was at home and available for an appointment at most any time during the day. She could bring the kids to the office during the early part of the day (if they were not in school) or later in the afternoon. Dad could have an evening visit after work. On the other hand, if you chose a more
A FAMILY ORIENTED PRACTICE MAY BE DIFFERENT IN THE 1990's

Commercial location, you tended to have a more male oriented practice.

But mom now works. Increasing numbers of youngsters have become "latch-key" children. Mom is not available for the afternoon visit (for either herself or the children) and both parents may want an evening or weekend dental appointment. In addition, time off for a dental visit during working periods may result in loss of pay and benefits.

Increasingly, family oriented practices may find that they must respond to the availability of their patients by starting office hours later in the day and continuing well into the evening; maybe even taking mid-week days off and providing services on weekends. Any number of service and commercial establishments have had to alter their business hours to continue to reach consumers who are now employed during a wide range of hours and shifts.

The need for changes to meet the availability of patients is not restricted to private practices. Numbers of dental schools have extended their clinic hours into the evenings to reach patients who are not available during the proverbial "banker's hours."

Follow-up and Home Care

When both parents or the one available parent are employed, free time is at a premium. The follow-up and supervision of needed home care (particularly for younger patients) could suffer. Whether it is care of orthodontics appliances, proper brushing or the taking of necessary medication, the practitioner will need to take added steps to assure that the proper regimen of care is being carried out.

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Table 3. Number of one parent families by residence, race and ethnicity: 1990 (5)

<table>
<thead>
<tr>
<th>Metropolitan Statistical Area</th>
<th>Non Metropolitan Statistical Area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central City</td>
<td>Ring Area</td>
</tr>
<tr>
<td>White</td>
<td>2.0</td>
<td>2.9</td>
</tr>
<tr>
<td>Black</td>
<td>1.9</td>
<td>.7</td>
</tr>
<tr>
<td>Hispanic*</td>
<td>.7</td>
<td>.4</td>
</tr>
</tbody>
</table>

* May be of any race.
Multiple Services During Appointment

Multiple procedures during a scheduled visit has become the preferred arrangement in many offices—most often for the “busy working man” in a family. But with dual worker families, the need to provide increased services during a single appointment may need to be extended to the “busy working woman.”

Female Dental Practitioners

The increasing numbers of women entering the dental profession are both 1) part of the developing dynamics of employment and 2) serving as role models for young women considering their prospects for a future in the dental profession. (In 1990, 38 percent of the entering first year dental school classes were female enrollees.9) It is possible that working women* may be attracted to female practitioners because of a feeling of that one would be dealing with a “kin-
A FAMILY ORIENTED PRACTICE MAY BE DIFFERENT IN THE 1990's

Figure 4. The changing labor force patterns of families, 1940–1988 (8).

Extending a Practice to an Underserved Population

The continuing search for added patient populations (to balance the changing prevalence of dental caries and associated disorders) increasingly will bring practitioners into contact with numbers of minority, lower income and lesser educated groups—the very populations which have undergone the most dramatic changes in the structure of the "traditional family." The difficulties that may arise as a result of the limited contact that many practitioners have had with these "non-traditional families" could range from simple hesitancy when discussing the absence of a male parent, to concern whether a female householder can afford needed services for herself and her children. It may take some time for practitioners to overcome long held stereotyped assumptions that when women are employed they only labor in positions that occupy the lower rungs of the economic ladder.

Your Practice Will Change!

The many practice procedures that have been geared to the "traditional family" arrangements (from financial collections to home care and appointment schedules) will undergo transformation if a successful (or beginning) family practice is to prosper in the 1990s and beyond. But much of these changes will seem quite natural for many younger practitioners, many of whom personally were raised in these family settings. And for the many established practices, these developments will alter many long held attitudes and habits. But as changes in the family structure continue to impact on all aspects of society, the family dental practitioner will find that he/she will need to respond to remain competitive. How different will your practice be in the future?

References


Reprint requests to:
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Stony Brook, NY 11794-8715

SUMMER 1991
In recent years, much interest has been expressed in the use of adhesive agents to promote bonding of resin materials to both enamel and dentin. Adhesive bonding of resin materials to tooth structures has many apparent advantages which includes: improved restoration retention, reduction or elimination of marginal microleakage and reinforcement of the remaining tooth.

**Enamel Adhesion**

In 1955, Buonocore introduced acid conditioning of enamel for bonding composite resins to enamel. This phosphoric acid etching technique produces micromechanical adhesion of resin materials to enamel. The effectiveness of etched enamel resin bonding has been widely accepted and has proven to be a durable, long lasting clinical procedure.

A 60 second phosphoric acid enamel conditioning time has been routinely used for many years. However, recent studies indicate that enamel etching time can be reduced to 15 seconds. An acid conditioning time of 15 seconds has been shown to create identical morphological changes in the enamel surface as a 60 second treatment time. In addition, adhesive bond strengths of resin materials and microleakage evaluations are similar in studies that have compared 15 and 60 second enamel acid conditioning times (Table 1). There is strong evidence in the literature to support reduced etching time for enamel adhesion of resin restorative materials. Reduced etching time can save chairside time and limit the potential for salivary contamination of bonding sites.

**Dentin Adhesion**

Although micromechanical bonding of resin materials to enamel has been very successful, adhesion to dentin has continued to be a challenge. Early attempts to use acid etch on dentin in techniques similar to etching enamel did not produce high bond strength of resin materials to dentin and the potential for pulp damage following acid treatment of dentin was reported.

Developing an effective adhesive bond to dentin has been much more difficult than bonding to the enamel surface. This is due in part to the composition of dentin which is 50% (by volume) organic material and water. In addition, dentin has a lower surface energy when compared to enamel. Dentin also exudes a dentinal fluid after operative procedures and has a resultant smear layer on the surface. Both researchers and manufacturers have devoted considerable time and effort in overcoming these dentinal characteristics which are an impediment to effective adhesive bonding. As a result, dentin adhesives have undergone rapid change with numerous commercial products being developed for the dental marketplace. Dentin adhesives have evolved through three generations of development with continued improvements in in-vitro bond strength and marginal microleakage.

Adhesive research has been primarily focused on achieving a chemical bond to the dentin substrate. Since dentin consists of two components, organic and inorganic, attempts have been made to develop a chemical bond to the calcium in the inorganic phase and the collagen in the organic phase.

**First Generation Dentin Adhesives**

A first generation dentin bonding system utilized an adhesion promoter to purportedly develop a chemical bond between the calcium ions on the dentin surface and the resin restorative materials.

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**Table 1. Shear Bond Strength of Resin Restorative Material to Enamel Using 15 and 60 Second Acid Conditioning**

<table>
<thead>
<tr>
<th>Conditioning Time</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Seconds</td>
<td>2828</td>
<td>1175</td>
</tr>
<tr>
<td>60 Seconds</td>
<td>3089</td>
<td>1015</td>
</tr>
</tbody>
</table>
This system reportedly used a surface active comonomer, N-phenylglycine glycidyl methacrylate (NPG-MMA) which acted as an adhesion promoter between the dentin and resin restoration. Studies conducted on the early commercial system (Cervident, S.S. White, Holmdel, NJ 07733) found poor adhesive dentin bond strengths and no improvement in marginal leakage when compared to conventional unfilled bonding resins.

**Second Generation Dentin Adhesives**

The second generation of adhesive systems primarily used a phosphate group in conjunction with a resin-bonding agent to bond to the calcium ions on the dentin surface. Other changes included the substitution of BIS-GMA resin for the methyl methacrylate groups in the conventional unfilled resins used for enamel adhesion with enamel acid conditioning techniques. While these materials were much improved over the first generation adhesives, they still did not yield adhesive bond strengths that approached the values obtained for acid conditioned enamel resin bonding. Materials in this group included the original Scotchbond (3M Dental Products, St. Paul, MN 55144), Bondlite (Kerr/Sybron, Romulus, MI 48174), J&J Dentin-Enamel Bonding Agent (Johnson & Johnson, East Windsor, NJ 08520), Creation Bond (Den-Mat, Santa Maria, CA 93456) and Prisma Universal Bond (Caulk/Dentsply, Milford, DE 19963). Dentin Adhesit (Vivadent Schaan, Liechtenstein) is also considered a second generation product, but its chemistry was based on an isocyanate monomer. In vitro studies reported modest bond strengths for these materials and limited resistance to marginal microleakage.

**Third Generation Dentin Adhesives**

The current or third generation dentin adhesives are considerably improved over the previous generations and have the potential to be more successful. These systems use a primer or dentin conditioning step in conjunction with a resin adhesive. In-vitro studies have been reported that show increased bond strengths when compared to the early generation materials (Table 2). The bond values shown in Table 2 are 24-hour shear bond strength to dentin. The teeth used to obtain these values were initially stored in 10% formalin for approximately 24 hours and then transferred into distilled water until used. The dentin bonding site was flat ground to 600 grit.

The chemistry of the third generation adhesive systems is more diverse than previous systems and includes: oxalate bonding (Tenure, Den-Mat, Santa Maria, CA 93456), glutaraldehyde/HEMA bonding (Gluma, Miles Dental Product, South Bend, IN 46614), maleic acid/HEMA-BIS-GMA (Scotchbond 2, 3M Dental Products, St. Paul, MN 55144), phosphate bonding (XR-Primer/XR-Bond, Kerr/Sybron, Romulus, MI 48174), and phosphate/glutaraldehyde bonding (Prisma Universal Bond 2, Caulk/Dentsply, Milford, DE 19963). These systems will be described separately.

Oxalate bonding was developed by Bowen as a multi-step system that used a combination of three treatments: 1) aluminum oxalate in nitric acid, 2) co-monomer of NTG-GMA (the adduct of N[p-toly1] glycine and glycidyl methacrylate in acetone) and 3) PMDM (pyromellitic dianhydride and 2-hydroxy ethyl methacrylate in acetone). The first commercial product to use these materials was Tenure. The original system contained NTG-GMA and PMDM in powder form and required mixing of each com-

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**Table 2. Mean Shear Bond Strength of Resin to Dentin**

<table>
<thead>
<tr>
<th>Adhesive System</th>
<th>Resin</th>
<th>PSI</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure Solution</td>
<td>Marathon One</td>
<td>2436</td>
<td>721</td>
</tr>
<tr>
<td>Prisma Universal Bond 2</td>
<td>Prisma AP.H</td>
<td>2400</td>
<td>798</td>
</tr>
<tr>
<td>XR Bond</td>
<td>Herculite XR</td>
<td>2262</td>
<td>532</td>
</tr>
<tr>
<td>Tenure Powder/Liquid (2-Step)</td>
<td>Marathon One</td>
<td>1943</td>
<td>551</td>
</tr>
<tr>
<td>Gluma</td>
<td>Lumifor</td>
<td>1450</td>
<td>609</td>
</tr>
<tr>
<td>J&amp;J Dentin Enamel Bond</td>
<td>Adaptic II</td>
<td>986</td>
<td>479</td>
</tr>
<tr>
<td>Prisma Universal Bond</td>
<td>Ful-Fil</td>
<td>942</td>
<td>406</td>
</tr>
<tr>
<td>Scotchbond 2</td>
<td>P-50</td>
<td>841</td>
<td>406</td>
</tr>
<tr>
<td>Scotchbond (Dual Cure)</td>
<td>P-30</td>
<td>493</td>
<td>290</td>
</tr>
<tr>
<td>Bondlite</td>
<td>Herculite XR</td>
<td>246</td>
<td>232</td>
</tr>
</tbody>
</table>
ponent with an acetone liquid. Three separate application steps were required with the original system. This product has since been modified into a two-component liquid system now called Tenure Solution. A conditioner (aluminum oxide and nitric acid) is used to treat the dentin followed by two applications of the mixed liquid components (NTG-GMA and PMDM).

The Mirage system (Chameleon Dental Products, Kansas City, KS 66117) has also recently been introduced which utilizes a second treatment of NPG and PMDM in combination. This system was introduced with 5% PMDM and recently changed to a 10% PMDM composition.

The glutaraldehyde/HEMA bonding system (Gluma) utilizes aldehyde groups to graft resin materials to the collagen (organic phase) component in dentin. This is a three component system which uses EDTA (ethylenediaminetetraacetic acid) as a cleanser step, followed by the application of a solution of HEMA (hydroxyethyl methacrylate) and glutaraldehyde. The final application is an unfilled resin which is a low viscosity bonding resin. This system was developed by Asmussen and Munksgaard to work in an aqueous environment and overcome the problems associated with the high organic and water content in dentin.

Scotchbond 2 is a two component system that uses 1) a dentin primer consisting of an aqueous solution of maleic acid and HEMA and 2) an adhesive resin of HEMA and BIS-GMA. The primer serves several functions: it facilitates wetting of the dentin and enhances the formation of a bond, solubilizes (or dissolves) the smear layer, and demineralizes the dentin leaving a collagen matrix. The adhesive resin then infiltrates the surface zone of demineralized dentin and polymerizes forming an interlock.

An advanced phosphate adhesive system (XR-Primer/XR-Bond) also has been recently introduced. This product is a two-step primer/adhesive system. The primer is an ethanol solution of a phosphonated dimethacrylate ester with a photo-initiator. The adhesive is a combination of phosphonated dimethacrylate ester, urethane dimethacrylate and an aliphatic dimethacrylate. The primer removes the smear layer and leaves the dentin covered with a thin layer of resin. The adhesive component then bonds to the resin-coated dentin.

Another advanced phosphate bonding system (Prisma Universal Bond 2) also contains glutaraldehyde in an effort to bond to both the calcium ions in the inorganic phase and the collagen in the organic phase. This is a two-component system consisting of a primer and an adhesive. The primer contains a phosphate adhesion-promoter, dipentaerythritol penta acrylate phosphoric acid ester (PENTA), in a solution of HEMA and ethanol which modifies, but does not remove, the smear layer. The adhesive resin contains the phosphate compound (PENTA) and glutaraldehyde which bonds to the modified smear layer.

Scanning electron microscope (SEM) studies have shown that third generation adhesive systems either remove or modify the smear layer through the use of a primer or cleaning agent. In-vitro studies have shown increased bond strengths with the third generation primer/adhesive systems. The advanced adhesive systems produce bond strengths to dentin that approach those routinely achieved with acid conditioned enamel resin bonding. Research efforts are continuing in an effort to develop adhesive agents that produce bond strengths that exceed the cohesive strength of dentin.

**Discussion**

Early dentin bonding research was focused on developing a chemical bond of resin materials to the dentin substrate. The newer primer/adhesive systems appear to use more hydrophilic resins in their compositions. The HEMA resin is known to be more hydrophilic than previous generation bonding resins and has the ability to more effectively wet the dentin surface. More efficient wetting of the dentin surface by the adhesive resin will result in a more intimate contact of resin and substrate and enhance physical or mechanical adhesions. It appears that the newer bonding adhesives may be achieving higher bond strengths to dentin through micromechanical bonding.

In-vitro (laboratory) studies can only serve as a predictor of clinical performance of dentin adhesives. To this date there is no proven relationship between laboratory performance and clinical performance. Unfortunately, few clinical studies are available to use as a basis for selection of adhesive products. New systems are often marketed before clinical studies can be completed on products under evaluation. Laboratory studies are valuable for comparison of the potential of products for clinical success. Clinical studies have shown dif-

VOLUME 58 NUMBER 2
ferent restoration retention rates for dentin adhesives. However, the best retention rates for bonded restorations are obtained when the cavosurface enamel is etched and bonded. In discussing dentin adhesives, Jordan has stated that it is mandatory to acid-etch the enamel periphery and that a long bevel is strongly recommended to enhance the resin bond.

**Summary**

The advanced third-generation bonding agents have created excitement as they have the potential to develop effective dentin bonding. These materials have shown better bond strengths and less marginal microleakage than the previous generations of adhesives. Enamel acid etching and the new primer/adhesive systems can enhance the retention rates of resin restorations and reduce or eliminate marginal microleakage.

**References**

Dental School Classmates Each Become President of the ACD

Frank P. Bowyer, Jr., was President of the American College of Dentists in 1969-1970 and Richard J. Reynolds was President in 1981-1982. As far as is currently known, these two men are the only dental school classmates ever to each become President of the College. Both of them have had outstanding careers in their professional activities and in community affairs, and both of them continue to be active in dental organizations, now fifty two years since they graduated from the University of Tennessee School of Dentistry in 1939. They have been close personal friends since they were freshmen dental students.

Frank P. Bowyer, Jr.
Dental School Graduation Picture
1939

Richard J. Reynolds
Dental School Graduation Picture
1939

Frank P. Bowyer, left, and Richard J. Reynolds pictured at the ACD President's Dinner at Boston, October 10, 1990. They are the only two dental school classmates to each become President of the American College of Dentists and were 1939 graduates of the University of Tennessee School of Dentistry.
Richard J. Reynolds

Richard J. Reynolds graduated from the University of Tennessee School of Dentistry in 1939. He was born and raised in Memphis, Tennessee, and remained there to practice general dentistry and to stay associated with the School of Dentistry as a part-time instructor in Fixed and Removable Partial Denture Prosthesis for over thirty years.

He became President of the Memphis Dental Society and President of the Tennessee Dental Association. He has been a member of the Tennessee Board of Dentistry for nearly twenty years and was its President in 1979.

He was elected to the American College of Dentists Board of Regents and became the ACD President in 1981–1982. He has been the Tennessee Section Secretary-Treasurer continuously since 1959.

He is a member of the American Association of Dental Examiners and was Chairman of the Test Construction and Review Committee of the Southern Regional Testing Agency, and has twice participated as a speaker in the Southern Conference of Dental Deans and Examiners. In 1983, he was the Commencement Speaker for the University of Tennessee Center for Health Sciences.

In 1982, he was named the University of Tennessee Outstanding Alumnus.

Active in his Rotary Club for 30 years, he finally found the time in 1989 to become President of his Memphis Rotary Club. A Captain in the U.S. Naval Reserve, he was the Commanding Officer of his Dental Company for 15 years.

Among his many accomplishments, he was a soloist and principle clarinetist with the Memphis Symphony Orchestra from 1935 to 1989. He is also a gourmet chef who has contributed to numerous cookbooks and is the author of wine and sauce charts.

When Dick Reynolds married his wife, Anne, in 1942 his good friend, Frank Bowyer, was in the wedding party.

Frank P. Bowyer

Frank P. Bowyer, Jr., graduated from the University of Tennessee School of Dentistry in 1939, received postgraduate training in Orthodontics and has practiced in Knoxville, Tennessee since 1942. He became “Dentist of the Year” for his District in 1948 and “Young Man of the Year” for Knoxville in 1952. In 1959, Tennessee Governor Frank Clements appointed him to the Board of Trustees of the University of Tennessee where he served for 21 years.

He was elected to the ACD Board of Regents and became President of the American College of Dentists in 1969–1970, the 50th Anniversary Year for the college. He served as Speaker of the House of Delegates for the American Dental Association and became ADA President in 1977. He served three terms as Vice-President of the Federation Dentaire International. He has been honored and cited by some of the most prestigious dental organizations in the world.

The Mayor of Knoxville appointed Dr. Bowyer to the Board of Directors to plan, produce and operate the Knoxville Health Pavilion for the 1982 Knoxville World’s Fair. The dental health exhibit, chaired by Dr. Bowyer, was viewed by approximately six million people and is now on exhibit in the Chicago Museum of Science and Industry.

In 1987, he was selected to receive the William J. Gies Award by the American College of Dentists and in 1990 he was presented with the American Dental Association’s Distinguished Service Award. He has given a lifetime of total dedication to his profession and his community and is a role model for all who know him.

His fondest early memories were during his dental student days when Dick Reynolds’s mother would invite his classmates and their dates every Sunday night for some good home cooking and singing around the piano, with Dick playing his clarinet. Dick’s neighbor, who frequently joined in with the singing, later became the famous singer Kay Starr.
NEWS OF FELLOWS

Albert L. Anderson of San Diego recently received the American Dental Association's Recognition of Outstanding Individual Effort in Access to Dental Care Program Award for his treatment of handicapped children. Now retired from pediatric dentistry practice, he is President of San Diego Zoological Society. Throughout his professional life, Dr. Anderson has been tremendously involved in civic activities and political affairs at a national level.

Fredrick E. Aurbach of Dallas was recently presented the Texas Dentist of the Year Award by the Texas Academy of General Dentistry. Dr. Aurbach was recognized for his contributions to dentistry and in activities outside of the profession.

James J. Caveney of Wheeling, West Virginia was appointed President of the Southern Association of Orthodontists. Dr. Caveney has served as President of the West Virginia Dental Association.

W. James Dawson of San Rafael was recently elected President of the California State Board of Dental Examiners. Dr. Dawson is a Diplomate of the American Board of Orthodontics and is also serving as Chairman of the Committee on Continued Competency of the American Association of Dental Examiners.

Lysle E. Johnston, Jr. has been named Chairman of the University of Michigan School of Dentistry's Department of Orthodontic and Pediatric Dentistry. Dr. Johnston has been Professor of Orthodontics and Anatomy for the past 15 years at St. Louis University where he also Chaired the Department of Orthodontics.

D. Walter Cohen, President of the Medical College of Pennsylvania was recently awarded the Maimonides Award at an Anti-Defamation League of B'nai B'rith ceremony. Dr. Cohen was recognized for his deep sense of ethics and humanity in education, health and community concerns.

Ralph R. Lopez was recently appointed to serve on the Commission on Higher Education by Governor Bruce King of New Mexico. Dr. Lopez is a past president of the New Mexico Dental Association and has been the recipient of numerous awards for his extensive service to the profession as well as to his community.
H. Berton McCauley is serving as the President of the American Academy of the History of Dentistry. Dr. McCauley is currently retired after an illustrious career in dental education, practice and as the Director of the Bureau of Dental Care of the Baltimore City Health Department.

Victor J. Niiranen was recently made the Chairman of the Nicholson-Neilsen Trust Fund of the National Society of Arts and Letters. Dr. Niiranen retired from the United States Navy Dental Corps in 1971. He is a past president of the National Society of Arts and Letters.

Linda C. Niessen was recently appointed Associate Professor and Director of Geriatric Oral Medicine and Executive Assistant to the President/Dean at the Baylor College of Dentistry, Dallas. Prior to this appointment Dr. Niessen served as the Director of the Geriatric Dental Program at the Veterans Affairs Medical Center in Perry Point, Maryland.

William E. Murphy, Professor and Chairman of the Department of General Dentistry at Baylor College of Dentistry, Dallas, retired recently after a 38 year career in dentistry. Dr. Murphy was inducted into the Hall of Fame of the Nebraska Dental Association in 1983.

Albert G. Paulsen of Falls Church, Virginia was the recipient of the “1991 Governor’s Award As An Outstanding Leader in Business and Education Partnerships” presented by the Northern Virginia Community College Education Foundation, Inc. Dr. Paulsen received the award from Governor L. Douglas Wilder of the Commonwealth of Virginia.

Thomas J. Zwemer was appointed Vice President for Academic Affairs Emeritus of the Medical College of Georgia and Professor of Orthodontics Emeritus of the School of Dentistry upon his retirement recently. Dr. Zwemer served as Associate Dean of the School of Dentistry until 1984 when he was appointed Vice President of the Medical College of Georgia.

William F. Wathen was recently appointed Assistant Professor in the Department of General Dentistry and Assistant Director of Continuing Education at Baylor College of Dentistry. Dr. Wathen served as editor of the Texas Dental Journal from 1975 to 1986 and of the Journal of the American Dental Association from 1987 to 1991.
Joseph T. O'Leary of Girard, Pennsylvania was the recipient of the American College of Dentists Distinguished Service Award. The award was presented to Dr. O'Leary by Ruth S. Fiedman, Regent of Regency 2. Regretably, Dr. O'Leary passed away three weeks after receiving the Distinguished Service Award. Dr. O'Leary had practiced dentistry in Girard from 1921 to 1984. He retired after an illustrious career in dental practice as well as a commendable record of community service. Dr. O'Leary was a Past President of the Pennsylvania State Board of Dental Examiners.

Howard Yost was recently honored with the presentation of the American College of Dentists Distinguished Service Award. Dr. Yost practiced dentistry for 55 years in Nebraska before retiring in Arizona. He was a founding member of the American Board of Orthodontics as well as a founding member of the College of Diplomates of the American Board of Orthodontics. He served as President of the Nebraska Dental Association in 1960 and as Governor of District 120 Rotary International.

Irwin B. Robinson received the University of Illinois Alumni Association's 1990 Constituent Leadership Award. Dr. Robinson is Associate Professor of Oral and Maxillofacial Surgery at the University of Illinois College of Dentistry.
Petition for the formation of the Ontario Section Approved

The Board of Regents, at its spring meeting, approved the petition for the formation of the Ontario Section. Dr. Kenneth F. Pownell of Toronto made arrangements to have a meeting of the Fellows from Ontario where it was unanimously agreed that a petition be submitted for the formation of a Section. The following Fellows were nominated and elected to serve as officers of the Ontario Section: Chairman E.J. Rajczak, Vice Chairman Edward G. Sonley, Secretary/Treasurer Kenneth F. Pownall, and Editor Phillip A. Watson. There are presently 27 ACD Fellows in Ontario who until now belonged to the Michigan Section. An additional 12 nominations have been approved for Fellowship in 1991 from Ontario.

Puerto Rico

The Puerto Rico Section held its Annual Meeting recently in San Juan and elected the following officers for 1991: Chairman Carlos L. Suarez, Vice Chairman Domingo Donate, Secretary/Treasurer Bienvenido Perez and Editor Arturo Santiago. Fellow José E. Medina of Florida attended the meeting and conveyed greetings from the Florida Section.

Photographed at the Puerto Rico Section Meeting are from the left Bienvenido Perez, Josue Castillo, Domingo Donate, Carlos L. Suarez, Carlos J. Noya, Jose E. Medina, Rafael Aponte, Arturo Santiago and Leo Korchin.
The Carolinas

The Carolinas Section recently held its Annual Meeting in Greenville, South Carolina. Dr. Gordon H. Rovelstad, Executive Director of the College, addressed the meeting, which was attended by a large number of Fellows.

Photographed at the Carolinas Section meeting are from the left: William R. Chapman, Chairman; William C. Bean, Secretary/Treasurer; Dudley C. Chandler, Incoming Chairman; James H. Gaines, ADA 16th District Trustee; B. Thomas Kays, Vice Chairman; and Gordon H. Rovelstad, Executive Director of the College.

Kansas City Midwest

The Kansas City Midwest Section held its Annual Meeting recently during the Annual Meeting of the University of Missouri-Kansas City School of Dentistry Alumni Association. The Section elected and installed the following officers: Chairman A. Edward Hall; Vice Chairman Ray E. Parsons; and Secretary/Treasurer John I. Haynes.

Photographed at the Kansas City Midwest Section Meeting are from the left: Secretary/Treasurer John I. Haynes; Immediate Past Chairman Donald M. Williams and Vice Chairman Ray E. Parsons.

Maryland

The following five events comprise the Maryland Section’s busy calendar of activities for 1991: May 23,—J. Ben Robinson Lecture delivered by Rear Admiral Milton C. Clegg, Chief of Navy Dental Corps. June 13,—Mid-Year Meeting at the Annapolis Yacht Club. August 16,—Luncheon Seminar at the Chesapeake Dental Conference. October 24,—ACD Student Day Program at the University of Maryland Dental School. November 13,—Annual Meeting of the Section at the Engineers, Club Baltimore.

The Maryland Section’s 1991 Officers are: Laurence E. Johns, Chairman; W. Michael Kenny, Vice Chairman; Stanley Block, Secretary; Frank J. Romeo, Treasurer; Harry Dressel, Editor and Don-N Brotman, Past Chairman. In addition the Section has formed the following committees: Nominations, Budget, J. Ben Robinson Lecture, Telephone, Select, Necrology, Mid-Year Meeting, Chesapeake Conference, Student Day, Annual Business and Awards.

New York

Section Chairman Eugene La Sota presented Regent Edward McNulty with a check for $1000 for the Campaign for the '90s.

At the New York Section Meeting, Fellow Anthony Mecca, on the left, received the New York Section's Meritorious Service Award from Chairman Eugene La Sota.
Southern California

The Southern California Section met at Anaheim during the Annual Session of the California Dental Association. The traditional ACD-ICD Breakfast Meeting was held. Section Chairman Edward B. Cowan presided.

The Section's Achievement Award for Senior dental students, one from each of the three Southern California dental schools, was presented by the Awards Chairman Regent, Richard B. Hancock. The Award is presented annually to the student from each school "who has shown great potential for future contribution and service to the dental profession and to the public the profession serves."

The main speaker for the meeting was Dr. Martin Craven, Treasurer for the California Dental Association, an Oral Surgeon who, only three days before the meeting, had returned from duty in the Persian Gulf. Dr. Craven was attached to an Army Field Hospital in a front-line position and the experiences he related held everyone spellbound.
Michigan

The Michigan Section held its Annual Meeting recently in Grand Rapids in conjunction with the Annual Meeting of the Michigan Dental Association. Several of the 19 New Fellows inducted at the College's Annual Meeting in Boston were welcomed and introduced at a banquet. A business meeting was held the following morning, presided over by Section Chairman Robert L. Moseley. Regent Prem S. Sharma of Regency 5 presented the Regent's report and Robert E. Doerr, President of the American College of Dentists, addressed the meeting and also installed the following new officers: Chairman Edward D. Barrett, Vice Chairman Malcolm D. Campbell and Secretary/Treasurer Arnold P. Morawa.

New Jersey

The New Jersey Section held a meeting at the University of Medicine and Dentistry in New Jersey and presented a program on ethics and professionalism. Section Chairman James L. Palmisano, who had attended the Ethics Workshop at the College's Annual Meeting in Boston, organized the program where 18 New Jersey Section Fellows divided the senior dental students into small groups and acted as facilitators in a discussion on ethics and professionalism. Following the workshops the students were invited to a luncheon hosted by the Section. The success of this program has led to arrangements being made for a similar workshop to be conducted for junior dental students during this year.

New Jersey Section Fellow Gregory C. La Morte, extreme right, served as facilitator for some of the senior dental students participating in the ethics workshop.

Ohio

The Ohio Section conducted its Annual Meeting in Columbus and elected the following officers: Chairman, Nancy Goorey, Vice Chairman, Irvin N. Kaplan, and Secretary/Treasurer C.J. Cavalaris. The meeting was attended and addressed by Regent Juliann S. Bluitt, Regency 4. The Ohio Section voted to present a check of $500 to the Campaign for the 90's and also donated $100 to each of the two dental schools in Ohio to be used for their student loan fund.

Photographed at the Ohio Section's meeting are from the left Secretary/Treasurer C.J. Cavalaris, Chairman Nancy Goorey, Immediate Past Chairman James T. Fanno, Regent Juliann S. Bluitt and Vice Chairman Irvin N. Kaplan.
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Bethesda, Maryland 20814

## REGENTS

| Regency 1 | EDWARD C. McNULTY  
608 Fifth Avenue, Suite 808  
New York, NY 10020 |
<table>
<thead>
<tr>
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<td></td>
<td>Atlantic Provinces, Connecticut, Maine, Massachusetts, New Hampshire, New York, Quebec, Rhode Island, Vermont</td>
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| Regency 2 | RUTH S. FRIEDMAN  
Gateway Towers, Apt. 26C  
Pittsburgh, PA 15222 |
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<td>Delaware, District of Columbia, Europe, Maryland, New Jersey, Pennsylvania, Puerto Rico</td>
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| Regency 3 | ALSTON J. McCASLIN, V  
211 East 31st Street  
Savannah, GA 31401 |
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<td>Alabama, Florida, Georgia, North Carolina, South Carolina, Virginia</td>
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| Regency 4 | JULIANN S. BLUITT  
NUDS, 240 East Huron St.  
Chicago, IL 60611 |
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<td>Illinois, Indiana, Kentucky, Ohio, West Virginia</td>
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| Regency 5 | PREM S. SHARMA  
1900 W. Woodbury Lane  
Glendale, WI 53209 |
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<td></td>
<td>Iowa, Kansas, Manitoba, Michigan, Minnesota, Nebraska, North Dakota, South Dakota, Oklahoma, Ontario, Wisconsin</td>
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| Regency 6 | RICHARD J. HAFFNER  
11810 Gravois  
St. Louis, MO 63127 |
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<tr>
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<td>Arkansas, Louisiana, Mississippi, Missouri, Tennessee, Texas</td>
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| Regency 7 | RICHARD B. HANCOCK  
4808 Clairemont Mesa Blvd.  
San Diego, CA 92117 |
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<td>Arizona, Southern California, Colorado, Nevada, New Mexico, Utah, Wyoming</td>
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| Regency 8 | CHARLES V. FARRELL  
1800 C Street, Ste. H-23  
Bellingham, WA 98225 |
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<td>Alaska, Alberta, British Columbia, Northern California, Hawaii, Idaho, Montana, Oregon, Washington, Saskatchewan</td>
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