

*the Journal*  
*of the*  
*American College*  
*of Dentists*

Dental Manpower Needs  
in the  
1970s

APRIL 1968

# *the Journal of the American College of Dentists*

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A QUARTERLY PRESENTING IDEAS IN DENTISTRY

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T. F. McBRIDE, *Editor*  
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St. Louis, Missouri 63108

APRIL 1968

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*Proceedings of a*

*Workshop on Dental Manpower*

*"Meeting Dental Needs in the 1970s"*

*St. Louis • December 10-13, 1967*

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*Under the Auspices of the*

*AMERICAN COLLEGE OF DENTISTS*

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*UNITED STATES PUBLIC HEALTH SERVICE*

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# PROGRAM OF THE WORKSHOP

## *Meeting Dental Needs in the 1970s*

CHASE-PARK PLAZA HOTEL, ST. LOUIS  
DECEMBER 10-13, 1967

*Sunday, December 10*

Registration  
Meeting of the Planning Committee  
Meeting of Chairmen and Recorders

### GREETINGS

Frank O. Alford  
President, American College of Dentists

### KEYNOTE ADDRESS

"The Scope and Urgency of the Dental Manpower Problem"  
Harold Hillenbrand, Secretary  
American Dental Association

"Some Solutions to Health Manpower Problems"  
Leonard D. Fenninger, Director  
Bureau of Health Manpower  
U.S. Public Health Service

"Health Legislation: Implications for Dentistry"  
Hal M. Christensen, Director  
Washington Office, American Dental Association

"Methods of Providing Dental Health Services:  
Position of the American Dental Association"  
F. Gene Dixon, Vice President and Managing Director  
California Dental Service

"Charge to the Workshop"  
Stanley A. Lovestedt  
President-elect, American College of Dentists

### ORGANIZATION OF STUDY GROUPS

*Monday, December 11*

"The Need, Demand, and Availability of Dental Health Services"  
George E. Mitchell, Regional Dental Consultant  
U.S. Public Health Service

**"Increasing the Productivity of Dental Personnel"**

Paul E. Hammons, Director

Dental Auxiliary Program

University of Alabama

**"The Development and Administration of Dental Programs"**

Wesley O. Young, Chairman

Department of Community Dentistry

University of Kentucky

**"Communications Technology: Its Utilization in Improving the Delivery of Dental Health Services"**

Joseph Becker, Director of Information Sciences

Interuniversity Communications Council (EDUCOM)

**"Reorientation of Personnel for Dental Health Services in the 1970s"**

William E. Brown, Associate Director

W. K. Kellogg Foundation Institute

University of Michigan

**STUDY GROUP SESSIONS**

*Tuesday, December 12*

Study Group Sessions (continued)

Preparation of Reports

*Wednesday, December 13*

**GENERAL SESSION**

Presentation and Discussion of Study Group Reports

Agreement on Recommendations

**"The Summing Up"**

James H. Simmons, Chairman

Committee on Social Characteristics

American College of Dentists

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# Foreword

FRANK O. ALFORD, D.D.S.

THE Officers and the Board of Regents of the American College of Dentists cordially welcome you to this dental manpower Workshop. We are pleased that so many of you considered it important enough to take the time to participate in the discussions of the problems to be considered during the next three days, especially since the Christmas Season is so near. I know you have been inconvenienced and have made personal sacrifices to come to St. Louis. With the weather conditions such as they are, it is fortunate that any of us arrived here. This indeed demonstrates your interest in the problems which confront us and your willingness to help seek a solution.

This is not a new experience for the American College of Dentists. In January 1965, the College sponsored a "Workshop on Enhancing the Image of Dentistry." Subsequently, after study of the Workshop findings, the Committee on Social Characteristics (the Planning Committee) made 14 recommendations which later were approved by the Board of Regents and referred to appropriate committees of the College for study and implementation.

Broadly, these recommendations included:

The development of programs to provide adequate dental health care for all of the people of the United States;

The promotion of prepayment plans;

The expansion of Dental Auxiliary Utilization programs;

An increase in educational facilities and programs for dental auxiliaries;

The expansion of the duties of these auxiliaries;

A study of teaching methods and training of teachers;

The improvement of communication methods;

The expansion of all aspects of the prevention of oral disease; and

The desirability of taking steps to assure the public of the continuing competence of dentists to render efficient and up-to-date dental health services. This, in turn, suggested the possible require-

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Dr. Alford is President of the American College of Dentists.

ment of continuing education for membership in representative organizations of the profession and for recertification of licensure.

Since these problems were thus pinpointed less than two years ago, they have been of concern not only to the committees of the College but to the entire profession, and today they have assumed increasing importance and urgency.

Early this year, the Committee on Social Characteristics thought it timely to further alert the profession to the tremendous needs for dental services, to sponsor informed discussion and reach decisions regarding these needs, and to view these problems in the light of recent social, economic, and legislative developments.

Thus this Workshop, "Meeting Dental Needs in the 1970s," has been planned with those objectives foremost. The position papers and the topics for discussion by the study groups certainly attest that those aims have been adhered to by the Planning Committee.

I urge you to heed the "Charge to the Workshop," and to contribute your sincere efforts and knowledge toward the accomplishment of the objectives.



# Charge to the Workshop

STANLEY A. LOVESTEDT, D.D.S., M.S.

**T**WENTY years ago Harlan H. Horner wrote "Dental Education Today" (1). While all ten divisions of his book merit careful study, the last part, titled "Tomorrow," presents some interesting considerations for us today. In a subdivision of that chapter, under the heading of "The Challenge of the Future," are some thoughts worthy of sharing with you.

The great challenge of the future to the dental profession as a whole is not its formal education, important as it is that our dental schools should everywhere catch the true scientific spirit which characterizes the progress of medicine, and should strive to make the second century of organized dental education and practice in America as conspicuous for the prevention as the first century has been for the repair of dental deficiencies.

The great challenge of the future is not to be found in the ever present problems of licensure and regulation, important as it is that state administrative agencies and examining boards should keep in touch and in tune with a reorganized and redirected dental curriculum.

The great challenge of the future is not to be found in the operation and observation of professional codes of ethics, important as it is, in all its human relations, for a true profession to distinguish itself from a trade.

The great challenge of the future, to all agencies of dentistry in common—schools, examining boards, and practitioners—lies in the inescapable responsibility of carrying to humankind the fruits of the science and of the art the profession already possesses. It is well known that the scientific discovery and the technical skill with which to serve humanity are always far in advance of the extension of professional practice. What we know in dentistry today, even in this enlightened land, adequately reaches relatively few of our people.

The responsibility for bridging the gap between what we are professionally able to do and what needs and ought to be done rests, first upon society and, second, upon the profession. In the mercy of God and in the light of true dental science the meanest human sufferer is entitled to all the relief, comfort, and care the science and the art of dentistry can bring to him.

It is significant that Horner charged society with the responsibility of bridging the gap between what we are professionally able to do and what needs and ought to be done. Society is working on this

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Dr. Lovestedt is President-elect of the American College of Dentists, and former Chairman (1966-67) of the Committee on Social Characteristics.

problem at a rate, and in a manner, which no one could have visualized at the time Horner made his charge.

The National Advisory Commission on Health Manpower has reported to President Johnson that the "health crisis" is not a matter of numbers of physicians or patients alone, but that it includes the organization of care and the system by which it is provided. The Commission reported that actually there is no system at all but that it "is more a collection of bits and pieces (with overlapping, duplication, great gaps, high costs, and wasted effort). . . ." In the recommendations on manpower, the Commission noted that the demand for services will arise faster than the increase in doctors or their ability to provide services.

It will be apparent to many of you because of the panel discussion on the "Image of Dentistry" at the 1963 Atlantic City Meeting of the American College of Dentists, the subsequent "Workshop on Enhancing the Image of Dentistry" held in January 1965 at St. Louis, and the program on "Optimum Health for the Individual in the Social Order: Planning the Good Life" at the 1965 Las Vegas Meeting, that the American College of Dentists has not been idle, and has already suggested many of the recommendations which the President's National Advisory Commission on Health Manpower has now recommended.

The late Harold W. Krogh in his introductory comment to the above-mentioned program on optimum health reviewed some of the planning phases that had gone on for two years prior to the meeting, and suggested that ". . . it is fitting that we pause a moment to see where we are, where we would like to be, and what our plans should be for getting there."

There is a great deal of similarity in the presentations at this manpower workshop and the papers at the 1965 Meeting of the College. And well there should be, for one of our Study Group chairmen participated in that program, and Kenneth J. Ryan may again repeat the 1949 policy statement of the House of Delegates of the American Dental Association that "Dental care should be available to all regardless of income or geographic location."

Finally, some of you will recall from the workshop of two years ago on the "Image" the splendid presentation by Donald W. Gullett in speaking on the topic of "The Lessons That Social Change Taught Canadians." He said that "The transition from one phase to the



next is so rapid that the man who stops to reason through to the full implications in a scientific manner is left far behind. . . . We live in an age where so often what was considered socialism yesterday is liberalism today, and even becomes conservatism tomorrow."

Out of this background of meetings and experience comes the recognition of three factors: one is the measuring of the supply of dentists; another is measuring the supply of dental services; and the third is the measuring of the need for dental services.

William R. Mann, in his statement of the problem and the charge to the Workshop at the University of Michigan, January 1962, on the future requirements of dental manpower, said (2):

"We will expect you, in your committees, to review the manpower problem, to examine the ways of improving the utilization of auxiliary personnel and the ways of increasing the productivity of dentists, and to estimate the impact of methods of payment upon the demand for dental services. . . . Most of all we want you to accept that a serious problem confronts dentistry. To deny the problem is probably to gamble with the profession's integrity. Unemotionally, and with objectivity, set about to develop a program that will permit dentistry to meet its obligations to the public in the ten or fifteen years immediately ahead. Make decisions and make them wisely—I can assure you that these decisions will be felt in the profession and, I hope, will serve it well."

Several members of the Planning Committee for that Michigan Workshop, some of the lecturers, and a majority of the chairmen of the evaluating committees are participating in this workshop.

One could ask why another manpower workshop only five years later. A population of over 200 million people already realized, increased social consciousness, increased earning power, increased educational qualifications, increased military demands, and a lack of proportionate increase in students of dentistry and dental graduates, coupled with recent action of the ADA House of Delegates, and social and health legislation, are all factors which may point to the timeliness of another workshop.

In regard to the "old" problem of continuing education and the training and use of auxiliaries, we are overdue in doing something rather than the usual discussion of licensing, reciprocity, and the development of additional auxiliary personnel. There exists a vast breach between the planners and the doers of dentistry.

With a mean age and median age basically unchanged from 1949 to 1960, as reported in the Michigan Workshop from figures provided by the ADA Bureau of Economic Research and Statistics, it could be assumed that dentists are, as a group, static. With a mean age of 48 years and a median age of 46.5, we must admit that our profession is not a "young" profession.

Recently the Regents of the University of Minnesota directed a study (3) of the health manpower for the Upper Midwest. This was a study of the needs for physicians and dentists in Minnesota, North Dakota, South Dakota, and Montana, and was sponsored by the Lewis W. and Maud Hill Family Foundation of St. Paul. It was determined that the median age of dentists in Minnesota was 51 years. Of practicing dentists, 27 per cent are 65 and over and 46 per cent are 55 or older. The study indicated dentists to be, on the whole, an older group than physicians.

In making the point that dentists are not youngsters, one should keep in mind that a health manpower study could be undertaken on a regional basis in other parts of the United States. While this may not produce new data, it could be different than that of the Department of Health, Education, and Welfare which has already accumulated and published data (4) in the Health Manpower Source Books. It would tend to bring the people in the respective areas being studied face to face with their problem and, ideally, this is where the problem should be recognized and dealt with.

The position papers presented at this Workshop are to provide challenge and impetus to our dealing with the manpower program of the 1970s. In the planning of the Study Groups, an effort has been made to correlate assignments with the position papers. The Committee on Social Characteristics is to be complimented on the selection of the Chairmen and Recorders. They will assist the Groups in the study of the problems assigned, for they have had an opportunity to give some thought to the topic assignments. But they will in no way dictate to you what you are to say and do. We are using the workshop as a method for obtaining answers to problems. The results of your studies will lead to recommendations which your Chairman and Recorder will bring back to the final general session. Each recommendation will be presented to the entire body for its consideration, discussion, and action. The recommendations that you approve will be prepared by the Committee on Social Character-

istics for presentation to the Board of Regents of the American College of Dentists for their consideration and action.

At the Fourth Workshop of Dental Examiners and Dental Educators, February 3, 1967, Harold Hillenbrand asked these questions (5):

When is the dental profession going to make up its mind to do something soon about the better utilization of the services of at least two of its auxiliaries?

When are the decision-makers in the profession going to catch up with the wishes and opinions of the majority of dentists who serve the public as private practitioners and who wish to utilize now, or who even now are utilizing, the extra hands that are available to them by well-trained auxiliaries?

When is the dental profession going to apply the findings of its experimentation and research and rescue them from an unnoticed and unlamented grave in the profession's literature?

When is the profession going to face up to the fact that if it permits a manpower shortage, government will move in, as it has in other countries such as Canada and England, to repair the shortage in its own short-sighted ways?

When are we, as professionals, going to stop kidding ourselves that the taking of a snap impression requires the anointed hands of the dentist and the delegation of this simple duty involves the sacrifice of professional responsibility?

When are we, as professionals, going to convince ourselves that the taking of a tube impression by an auxiliary represents no real or potential damage whatever to the health of the public?

When are we, as professionals, going to assume our real responsibilities by delegating to others the tasks which do not require any measure of professional competence thus enabling us to serve our patients better and give them the time and understanding which will motivate the patient to pursue a lifetime of good dental health?

There we are, ladies and gentlemen. Is there any question about the work cut out for us?

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2. Proceedings of the Workshop on the Future Requirements of Dental Manpower and the Training and Utilization of Auxiliary Personnel. The University of Michigan, W. K. Kellogg Foundation Institute, Graduate and Postgraduate Dentistry. Edwards Brothers, Ann Arbor. Jan. 15-19, 1962. p. 5.
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# The Scope and Urgency of the Dental Manpower Problem

HAROLD HILLENBRAND, D.D.S.

AS keynoter, I have been given the assignment of commenting concisely and perhaps with some clarity on the theme "Meeting Dental Needs in the 1970s." I would warn you that I do not intend so much to comment as to challenge.

Let me offer a few postulates which though disparate are fundamental to the workshop:

—We are not now meeting the dental needs of the 1960s, much less are we prepared to meet the needs of the 1970s.

—We have now in many areas a shortage of dental manpower.

—We are now utilizing our auxiliary personnel in a wasteful, confusing, and sometimes illegal manner.

—And finally, we talk of "need for dental care" versus "demand for dental care," but I suggest that if the barriers of ignorance and economic want are eliminated, there is no difference between what is needed and what will be demanded.

In essence, I am saying that the discussions have been long, the studies have been endless, and it is now time for imaginative action. The pressures which are building in our society from government, from socio-economic forces, and from the emerging demand of the citizenry for health as a fundamental right, will not be contained by vague promises. The health professions must act.

A few weeks ago, a group of highly respected health leaders completed an 18-month study of the nation's health care system and presented their two-volume report to President Johnson. This group—officially named the National Advisory Commission on Health Manpower—included such men as Dr. Dwight L. Wilbur, president of the American Medical Association; Dr. Edwin L. Crosby, executive vice-president of the American Hospital Association; and from the dental profession, Dr. Joseph Volker of the University of Alabama,

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Dr. Hillenbrand is Secretary of the American Dental Association.

and Dr. Maynard K. Hine, who at the time of this appointment was president of the American Dental Association.

The Commission's essential comment was that we have here and now in the United States a health crisis, a crisis which holds every promise of worsening unless major changes are made in the health system. This was not a call for a master federal plan for health. On the contrary, the Commission emphasizes throughout its report that government alone cannot possibly solve the critical problems we face.

The Commission members stated it this way:

But if our recommendations have merit and timeliness, how are they to be implemented? We hope that government, universities, the health professions, hospitals, private insurance carriers, and prepayment plans will give attention to our findings and act where it is appropriate. Voluntary acceptance of responsibility is always the most effective, and this is what we recommend. But time is short. Unless action is taken soon, health problems—like the problems of our neglected urban centers—may no longer be controlled. A boulder teetering at the top of a cliff can be steadied with a few strategically placed stones, but once rolling it cannot be stopped until it has run its damaging course.

The leadership of the Federal Government should make clear to each segment of society the nature and urgency of the problem, and assist each group in responding to the particular need which it is best fitted to serve. Such an undertaking, if accomplished successfully, will involve a creative partnership of public and private enterprises, and might even become a useful model for progress in other fields.

Some of the problems which the Commission cited were:

Impersonal attention for the patient; long waits to see a doctor; a shortage of hospital beds and services; uneven distribution of care; costs rising sharply "from levels that already prohibit care for some and create major financial burdens for many more."

The Commission recommended 58 major changes in the health care system, among which were:

1. Refresher courses for physicians and dentists or periodical examinations for renewal of their licenses to maintain their skills and to guard against malpractice and "unnecessary or overly expensive tests and treatments" by some.

2. Incentive grants to dental and medical schools to increase the output of dentists and physicians.

3. Direct financial aid to dental and medical students to make available "student loans to cover the full costs of tuition and living expenses." I might point out here that several Commission members



submitted minority reports on this recommendation, with two indicating they felt medical and dental education should be free and one other feeling that student loans of this magnitude were not necessary. The report went on to recommend that students have the option of paying back the loan or of "giving two years of his time to approved national service apart from Selective Service obligations."

The report specifically notes that "dental schools have also suffered from a lack of educational funds. These schools, however, have received support for education not from research funds but from fees obtained by operating dental clinics. As a result, the educational function has been overbalanced by service requirements. Direct funding for education would allow dental schools to determine more effectively the balance between service, education and research."

4. Federal funding of university programs to develop new categories of health professionals. The report noted that "the gap in training between professionals and ancillary personnel is increasing. In medicine the physician with 12 years' training after high school has to rely mainly on the nurse, who may have had as little as two years' professional education. There is a smaller but similar gap between dentists and dental hygienists. Such discrepancies are likely to result in inefficient use of the more highly trained and an unwarranted assumption of responsibilities by the lesser trained."

5. The Commission recommended that professional societies, health insurance organizations and government should extend the development and effective use of a variety of peer review procedures in maintaining high quality health and medical care. These procedures should incorporate the following principles:

Peer review should be performed at the local level with professional societies acting as sponsors and supervisors.

Assurance must be provided that the evaluation groups perform their tasks in an impartial and effective manner.

Emphasis should be placed on assuring high quality of performance and on discovering and preventing unsatisfactory performance.

The more objective the quality evaluation procedures, the more effective the review bodies can be. To enable greater objectivity, there should be a substantial program of research to develop improved criteria for evaluation, data collection methods and techniques of analysis.

There are many more recommendations, covering licensure, emergency care, other aspects of education, quality control, health insurance, etc. But these five will provide some indication of the scope of the report, and the report itself is an example of the type of pressure which is building in our nation for improved health services.

Now let me cite in more detail some of these pressures as they apply specifically to dentistry.

#### EXPECTED POPULATION GROWTH

Population experts, while modifying their expectations of a few years ago, are still anticipating a growth in population of 1.4 per cent in 1970, and of 1.6 per cent in 1975. Perhaps even more meaningful are the expected absolute growth figures: from 2.2 million in 1966, to 3.6 million in 1975, and 4.1 million in 1980. The absolute population growth, then, is expected to be nearly twice as high in 1980 as compared to that in 1966. This would mean a population of 223.8 million in 1975, and 243.3 in 1980. For comparative purposes our population today is 200 million.

Population increases alone will impose an increased demand upon the profession for service of approximately 15 per cent in 1975. And, this percentage will increase to an estimated 25 per cent by 1980. Thus, by the end of the next decade, we will be expected to be providing one-fourth more service than we are now—based solely on population growth.

This could mean, according to mid-1966 figures, that the dentist of today, who is annually averaging some 1,640 hours at chairside, will be asked to average more than 2,000 chairside hours by the end of the next decade. Of course, this supposes that the dentist-population ratio of one to 2,000 remains essentially the same in 1980 as it is today. As closely as we can determine, it is likely that the ratio *will* remain the same or perhaps decline slightly.

#### INCREASED PERSONAL INCOME

The population of this nation is, by and large, enjoying the highest standard of living ever attained by any world civilization. And, it is also accepted—at least by the experts, with whom I can't quarrel since I lay no claim to being an economist—it is accepted that this affluence will continue to be enhanced as we approach the twenty-first century.

Within the span of 15 years—from 1950 to 1965—we saw public expenditures for dental care increase by 52 per cent. In 1950, the public spent \$962 million for dental care; in 1965, expenditures reached \$2.8 billion, and figures for 1966 indicate that the public spent more than \$3 billion for dental care. This figure becomes more notable in as much as it represents more than the *total* national health bill in 1940.

A portion of the increase in consumer expenditure for dental care can be attributed to an increase in dental fees. Between the years 1935 to 1966, fees for dental care rose 133 per cent. However, the amount of public expenditures rose, during the same period, about 182 per cent. Thus, there is a disparity of some 50 per cent between dental fee increases and dental expenditure increases, an indication that the demand for dental care grew in greater proportions than fees.

#### GOVERNMENTAL PROGRAMS

What may be regarded as the most significant factor in the projected increased demand for dental care is the new and expanding role of government. I need not remind you that the 89th Congress set an unprecedented record in health legislation—much of which had either direct or indirect bearing upon dentistry.

Title XIX of the Social Security Act—familiarily known as Medicaid—is a program certain to have broad impact on the demand for dental care. It requires all states, which use federal funds for medical assistance, to provide comprehensive dental service for the indigent and dentally indigent by 1975.

The ADA Dental Health Program for Children will have obvious impact on demand, since it will make dental care available to all children, particularly those needy children who are not now receiving adequate care. This means that the profession will not only be treating vastly greater numbers of children, but it will also be treating children who have a record of accumulated years of dental neglect.

In another area, dentistry has been involved—and is becoming more involved—in the federal poverty programs. Our record in Project Head Start is indeed excellent. When the first, confusing, year of the Head Start program revealed that dental care was the single most needed service by Head Start youngsters, it became

patently clear that dentistry's involvement in this program would continue to expand as the program itself is extended to greater numbers of children each year.

Such community action programs as the Neighborhood Health Centers will require greater participation by the profession—again in the area of treatment of the dentally underprivileged population. And as before, this is the population segment most in need of care.

In the area of prepayment, local, state, and federal government employees are anticipating comprehensive health insurance coverage which will include dental services. Thus, through increasing governmental involvement in prepayment programs for its employees, and through such mechanisms as the ADA children's program, we anticipate that some 50 million persons will be covered by dental prepayment programs in 1975.

And finally, there is clear evidence that the dependents of military personnel will one day be covered for dental service by civilian dentists. A committee of the House of Representatives conducted hearings on military dependent dental care and published a report November 15 in which it served notice that such legislation would be introduced in the 90th session of Congress. Such a program if it covered dependents of active duty personnel, retirees, and their dependents would include six million persons, more than the total now covered by all prepayment mechanisms. Because of the cost, it is likely that if such legislation is passed it will be limited initially to dependents of active duty personnel.

#### DENTAL TREATMENT CHANGES

Measures which prevent dental caries, such as fluoridation, will certainly change the character of treatment and may actually increase the amount of dental care needed in the future. The number of teeth lost will be less, and those lost will generally be lost later in life. This likely will mean more crowns, fixed prostheses, and partial dentures, and more treatment for periodontal diseases.

It is also likely that the practice of dentistry will be more concerned with complex surgical procedures and with treatment of soft tissues diseases—vastly more time-consuming procedures than the reparative work done today.

In one recent study of some 2,000 persons enrolled in a dental prepayment plan offered by a group practice, it was found that the

average chair time required for initial care was 5.2 hours, and the average chair time required for annual maintenance was 2.8 hours. Time required for orthodontic treatment was not included. The patients were of a somewhat higher-than-average socio-economic status; in addition, optimum use was made of auxiliary personnel. Therefore, chair time required for the average patient in practice today likely would be greater than these figures, particularly for initial care. And, with the greater amount of preventive, maintenance, restorative, and surgical procedures probably required by our future patients, it is likely this average time will increase, rather than diminish.

#### DENTAL PERSONNEL

These various factors I have discussed should certainly convince us that there will indeed be a future demand upon dentistry that will be unprecedented. But if there are some who are still dubious, permit me to cite the cumulative percentage of demand our experts estimate these factors will create.

Taking all these factors into account—population growth, increased buying power, expanded use of prepayment, and the changing character of treatment—it appears that the amount of dental care to be provided by 1975 will be 50 to 75 per cent higher than in 1965, and that it will be 75 to 100 per cent higher in 1980.

I might add here that the Health Manpower Commission's report, which I referred to earlier, is even more emphatic in its estimates of the expected increase in demand. The Commission's report states:

"Our calculations, based on the experience of the last decade, indicate that the demand for dental services (in current dollars) will increase between 100 per cent and 125 per cent in the period 1965-1975."

The Commission also stated that the expected increase in the number of dentists, improvement in technology, and increased use of auxiliary personnel—but assumedly under present concepts—would provide increased productivity for the dentist of 50 per cent by 1975. "Such an increase would, however, still fall short of the expected increase in demand," the Commission reports.

The ADA Bureau of Economic Research and Statistics estimates that there are currently 97,500 professionally active dentists, of



whom 89,000 are in private practice. These private practitioners are assisted by an estimated 116,000 full-time and 28,000 part-time auxiliary personnel. This includes some 81,000 chairside dental assistants, 9,700 dental hygienists, 4,300 dental laboratory technicians in the dental office and another 27,000 technicians in commercial laboratories, and 21,000 secretaries and receptionists.

It is interesting to note here that during the three years ending in 1965, the number of full-time auxiliary personnel increased 28 per cent, compared to an increase of 2 per cent in the number of dentists in private practice.

Based on our knowledge of new dental schools and planned school expansion, the ADA Council on Dental Education estimates that the number of dental graduates will be 4,300 by 1975, an increase of 36 per cent over the 3,200 graduated in 1966. Projections beyond 1975 cannot be made with any degree of accuracy because of the many uncertainties and variables involved.

If the number of graduates does increase as expected, the number of professionally active dentists will reach 110,770 by 1975. And here we are confronted with another factor. Today, a professionally active dentist is considered to be a dentist under 68 years of age, because the number of dentists over that age who are still active is equal to the number under that age who are retired. However, the general trend has been toward a gradual lowering of the retirement age. If this trend continues—and I strongly suspect it will—the number of professionally active dentists in 1975 will be lower than the calculated figure of 110,770. However, let us stay with this projected figure for the moment.

Thus we find, with those 110,770 active dentists available to treat the estimated 223.8 million population, that the population per dentist will remain almost identical to current ratios: approximately one dentist to every 2,000 people.

The projected increase in number of dentists will take care of but 15 per cent of the anticipated 50 to 75 per cent increase in demand by 1975. And, although we cannot calculate the increase for 1980 as accurately, it is estimated that an increase in the number of dentists in 1980 will take care of perhaps 25 per cent of the expected 75 to 100 per cent increase in demand.

## PRODUCTIVITY

This then brings us back to the stark fact that if the dentist is to meet his responsibility in the 1970s, he must become more productive. We must look at group practice, we must look at specialization, we must look at office procedures, we must look at treatment techniques, and certainly we must expand the use and functions of the hygienist and assistant.

The House of Delegates at the recent annual session moved the profession a major step in that direction when it passed a resolution urging state dental societies and state dental examining boards to consider revision of practice acts to eliminate the serial listing of auxiliary functions and to allow the state boards to prescribe regulations for expanded use of these auxiliaries.

In submitting the proposal to the House, the Councils on Dental Education, Dental Health, and Legislation pointed out that state laws offer a variety of standards for auxiliaries and, in some instances, "are so restrictive as to prohibit assignment of duties to auxiliaries which are acceptable to the dental profession and which are in the interest of a better service to that patient. . . . In one state, for example, the auxiliary may be permitted to apply topical fluorides to the teeth; in another, the same procedure is a violation of the law. In one state, a dental hygienist may place her instrument below 'the free margin of the gingiva'; in another state, this is a violation of the law. In some states an auxiliary is permitted to expose X-ray films; in other states this is a violation of the law."

The report commented further that the dental profession, at least in this one area, is far behind the medical profession:

It has long been recognized that the delegation of duties by physicians and surgeons to their auxiliaries is in a more advanced stage, professionally and legally, than is dentistry. The success of this effort is attested by public and professional acceptance of physician-nurse cooperation, for example, in rendering a better service to the patient. An excerpt from the "Business and Professions Code" of California (Section 2725) will serve to illustrate this point and its possible application to dental practice acts:

The practice of nursing within the meaning of this chapter is the performing of professional services requiring technical skills and specific knowledge based on the principles of scientific medicine . . . and practiced in conjunction with curative and preventive medicine as prescribed by a licensed physician and the application of such nursing procedures as involve understanding cause and effect in order to safeguard life and health of a patient and others.

Enterprise and imagination are needed to apply the experience of medicine and its auxiliary disciplines to the practice of dentistry by revision of the state dental practice acts or through regulation when this is possible.

It is heartening to note that in spite of the formidable barriers raised by so many dental practice acts, several states have moved toward liberalization of the statutes dealing with duties of auxiliaries. Idaho, Kansas, and North Dakota amended their state acts in 1967 to permit dental hygienists, or, in the case of Kansas, dental assistants, to serve more effectively under the supervision of the dentist. Michigan, by issuance of regulations and not by amendment of the statute, now permits dental hygienists to take impressions for study models, remove periodontal and surgical packs, remove sutures, and polish metal restorations. I might add that I cannot believe the taking of a snap impression or the application of topical fluorides carry the same potential for risk to the patient as does the giving of an intramuscular injection. Yet such injections are routine for the registered nurse and in some states for the licensed practical nurse.

In a very real sense, our profession has always been in the vanguard of the health professions in proposing and implementing progressive and successful programs. Yet, we have fallen behind in this critical area and if we do not take immediate action, we can only expect the problem to become more difficult of solution.

Therefore, I would suggest that each of you look past the discussions and debates of the next few days toward implementation, toward action which the profession can take now. It has long been the hallmark of the American College of Dentists that it has assumed leadership within the profession in dealing with current issues. And, this leadership has often generated the momentum which has placed our profession in the enviable position of leadership for all the health professions. I am certain that, by Wednesday, this workshop will have provided each of you with renewed vision and determination to meet the profession's pressing problems.

# Some Solutions to the Health Manpower Problem

LEONARD D. FENNINGER, M.D.

AVAILABILITY, or the lack thereof, of health services of all types for all members of our society has become a matter of the deepest public concern. It has also become a major issue of public policy and public politics. Most of the practitioners of the health professions and the arrangements which we have evolved for the preservation of health and the prevention of illness, as essentials to the fulfillment and the dignity of individual men, women, and children, are totally unprepared to deal with the maelstrom which threatens health services in the United States.

The origins of our acute discomfort are many, and in some ways they are related to the successes of research in the health sciences, the education of the public to expect and demand good health care, and the success of our *national productivity* which has placed at our disposal resources to assure the availability of health care to those who are in need of it. Our dilemma also derives from a social decision that financial barriers, barriers of race and creed, barriers of cultural difference should not exclude anyone from receiving health care when he seeks it. This social decision is clearly evident in the enactment of Titles XVIII and XIX of the Social Security Act by the Congress.

We can project long-range trends in manpower supply and demand with reasonable accuracy. We have some understanding of social, economic, and intellectual change, and limited indices for measuring their implications for health and health planning. We can describe much of what is happening now in health and what will happen in the future.

What we see is a stunning set of contrasts. On the one hand, there are the remarkable scientific and technological advances which are not only providing new weapons for the conquest of disease, but

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creating intense public expectations that the battle will be won. On the other hand, we see inadequate supplies of manpower ineffectively used, reducing the opportunities of the professions and leaving the public's hopes unfulfilled. In an age when more effective treatment of illnesses is possible, and when new prospects for facilitating the delivery of services are regularly put forward and enthusiastically discussed by planners and practitioners alike, a great many people in a great many communities find that the existing avenues to care continue to be full of roadblocks, and the quality of care they receive falls short of the standards they have rightfully come to expect.

The increasing impatience and dissatisfaction with current health services is a measure of the acute public awareness of the difference between what is and what could be, and certainly we in the health professions, in the light of all the knowledge and experience at our command, cannot ignore the fact that gross inequalities do, indeed, exist.

Undoubtedly, the most glaring contradictions stem from the shortages of resources, in particular the shortages of well prepared and dedicated people who will protect health and render care to those who are sick. Because we have had too little to work with, we have had to spread ourselves and our services too thin. The spread, however, is uneven among socio-economic groups and geographically. Both the public and the professions have recognized that this is true. And both now understand that it is essential to shore up our manpower resources, not only in quantity but also in quality.

Out of this mutual concern has come the Health Professions Educational Assistance Act. With the expansion of training facilities which will be realized through the nationwide school construction program, we can, over time, improve the availability of well qualified men and women who practice the health professions.

Because the adequacy of manpower resources is the foundation for everything we undertake in our society, the importance of continued efforts to strengthen these resources cannot be overstated. At the same time, it would be unrealistic to define adequacy solely in terms of the numbers of practitioners the several professions command or the quantity of services they provide. Its meaning also derives, in large part, from the effectiveness with which the skills of practitioners are used.



Now, effective use entails a great deal. It connotes an education which provides doctors not only with scientific knowledge and technical skills, but with an understanding of the force and direction of social change, its impact on the lives of people and on professional responsibility and action.

It involves such practical matters as the broader employment of existing auxiliaries and the creation of new categories of skills. But it also means the development of new working patterns and inter-relationships—patterns which permit both the practitioner and the auxiliary the greatest and most productive realization of their talents, while assuring the patient the finest quality of care.

Effectiveness also connotes relevance—the relevance that prevailing modes of professional practice and accepted systems for delivering health services have to the changing character and changing needs of a contemporary society. To be effective, inevitably we must be adaptable and continue our intellectual growth. Not only must we as health professionals exercise the sort of intellectual curiosity which leads us to determine the usefulness of advancing technology, such as computers in diagnosis or in national manpower inventories, but we must also be willing and able to adapt or redesign the pattern of our professional actions so that we can be reasonably sure we are serving the public's interests as well as our own. With that in mind, efficient use must include an unremitting effort to assure the quality of all we undertake and, most certainly, the quality of the health care we provide.

Because programs like the Health Professions Educational Assistance Act give us such an unprecedented opportunity to work toward the improvement of health, this question of effective utilization deserves most serious consideration. For if we continue to force all our actions and all our resources into old molds and patterns and systems of care, then much of the *value* of what we achieve quantitatively will have been frittered away. In saying these things, I have of course said nothing particularly new or startling. Anyone who is deeply and personally concerned with health problems in general and manpower problems in particular has thought them or read them or argued out the particularities a dozen times over:

- The need for up-dated, germane undergraduate curriculums.
- A bigger role for auxiliaries.
- The potentialities of group practice as a means of concentrating



the sources of service, conserving professional skills, and assuring the control of quality.

- The double-duty possibilities of group insurance programs, such as the medical "blues" or the dental service corporation, first in reducing costs barriers to care; then in serving as avenues of communication and patient education.
- The interested knowledgeable and active involvement of dentists and physicians in every phase of community health planning to assure the effective use of resources, appropriate emphasis, and the quality and comprehensiveness of care.
- The importance, in these impersonal times, of meeting the great quantitative need for care which will enhance individual human dignity and increase the likelihood of individual fulfillment.

There have been few professional gatherings at which these avenues to solution were not propounded and even applauded. When you stop to think of it, there is perhaps no area of immediate national concern that has received recently more energetic attention than the problem of health manpower as the most important resource in the delivery of health services. I think it can be said with equal confidence that the health professions have defined some of the actions which are most necessary to put our own house in order.

But it is precisely at the point where facts and knowledge should begin to be translated into practical, forward-looking action that manpower planning falters. Though our perspective seems clear enough, though we speak with authority to change and adaptability, we have thus far been unwilling to act. We have been unwilling to undergo the discomfort associated with realignment, alteration, and redirection—necessary for the manpower solutions the future will need and can and should have. We continue to postpone change until some future time, while in the here and now we adhere to the familiar and the comfortable.

Medicine, for one example, speaks to the possibility of developing new categories of manpower which can provide a wide variety of primary services. We speak to the need for building long-term treatment and rehabilitation facilities, and of recasting our professional curriculums so that physicians and nurses can be more adequately prepared to care for the chronically ill and the complex of ailments that so often afflict them. In actuality, however, we are not preparing those in the health professions to work in the community

and to work together. At a time when chronic diseases have become a major health concern, most hospitals in which the education of physicians and nurses takes place are still institutions for acute or short-term illness. Next year's medical and nursing school graduates will still be oriented to differential diagnosis and treatment of acute episodes of illness, toward disease rather than toward its prevention, toward disease rather than toward those who suffer from it. It seems to me that in dentistry the same sort of contrast exists. Though the greater potential for progress lies in the practical furtherance of the concept of team dentistry, the actuality in education and in practice is still that of the dentist performing even the most routine tasks himself.

Even important additions to the educational experience such as the Dental Auxiliary Utilization Program, have tended to confine their instruction to the traditional pattern of the traditional dentist-assistant relationship. And though applied research is opening doorways to the more productive utilization of auxiliary skills, little has been done to try these possibilities in dental schools. Nor have many schools ventured to use the Dental Auxiliary Utilization Program as a vehicle for their own investigations. There is this to consider also: The Health Professions Educational Assistance Act now provides grants which are designed to permit our medical and dental schools to change, to try new things. Yet how many schools have examined their present educational programs and have really attempted to change them? I think we are timid. Timidity is a luxury we can ill afford. For current patterns of practice and professional attitudes were determined years ago—in dental and medical schools. They obviously do not change easily. Tomorrow's patterns and preferences are being determined today—in dental and medical schools. What we do and what we do not venture to do in education—what examples we set for students are matters of great concern for the year 2000.

Even in a matter as mundane as professional working hours, our rigidities show. Everybody knows what the phrase, "bankers' hours" means. What is interesting is that it no longer applies to bankers! They have adjusted their schedule to fit the convenience of the public they serve. But doesn't it apply a little too well to those of us in the health professions? It is difficult to avoid the conclusion that the usual schedule of the average practitioner represents a serious in-

convenience to perhaps the majority of his patients, and may even deprive some of them of the opportunity to seek care. This can also be said of many of the institutions which provide care. Human need and illness know no clock or calendar.

As I was preparing this paper, the report of the National Advisory Commission on Health Manpower was released and, to a public deeply concerned about health problems and all that pertains to them, it was front-page news. Like all such reports on extremely complex social, cultural, and scientific functions, the analyses are over-simplified and incomplete. Its treatment of dental manpower is skewed and inadequate. Nonetheless, the report contains much that is useful. In the nature of the criticisms it voices and the remedial actions it recommends, the Commission's report leaves little reason for believing that complacency or timidity or inaction can any longer be condoned. Looking over the American health scene, the Commission sees both paradox and crisis: "long delays to see a physician for routine care; lengthy periods spent in the well-named waiting room, and then hurried and sometimes impersonal attention in a limited appointment time; difficulty in obtaining care on nights and weekends, except through hospital emergency rooms; unavailability of beds in one hospital while some beds are empty in another; reduction of hospital services because of a lack of nurses; needless duplication of certain sophisticated services in the same community; uneven distribution of care, as indicated by the health statistics of the rural poor, urban ghetto dwellers, migrant workers, and other minority groups, which occasionally resemble the health statistics of a developing country; obsolete hospitals in our major cities; costs rising sharply from levels that already prohibit care for some and create major financial burdens for many more."

Toward the solution of this crisis in health, the Commission makes some fifty recommendations of varying degrees of originality and possibility, but all of them are directed to the general thesis that more of the same is just not enough. The reports puts it this way: "The crisis, however, is not simply one of numbers. It is true that substantially increased numbers of health manpower will be needed over time. But if additional personnel are employed in the present manner and within the present patterns and systems of care, they will not avert or even alleviate the crisis. Unless we improve the system . . . care will continue to become less satisfactory."

Quality—availability—self-criticism—innovation—experiment—adaptability. These ideas appear over and over in the Commission's report. I am sure that they will be heard over and over during this workshop, for they are very much a part of the currency with which we must pay for health progress.

There is, of course, another sort of currency which is of some importance to our plans and activities—federal support. There are federal grants available in the most crucial areas of professional endeavor—support of students, of education, construction, research, training, auxiliary development and, now, comprehensive health planning. And the fact that such support exists gives the health professions possibilities for greater freedom of action than they have enjoyed before. For it is now possible to do much of what we need to do to take those actions we deem essential. However, federal support does not solve the problems of professional attitudes and functions. Services are given to individuals by individuals with technical and professional skills. Determining exactly what is to be done is uniquely a professional responsibility. We are the recipients, I might say the trustees, not only of vast sums of public and private money but of a remarkable investment of public trust. The public still offers the professions the opportunity to design much of the future in health. We are still experimenting with courses of action and of support in the public and private sector. If we do not overcome our own fears or rigidity or lack of foresight, we may not continue to have the opportunity to contribute our professional knowledge in the organization and delivery of health services.

It is incumbent upon us, therefore, to forego, once and for all, the temptation to proceed as if the health professions alone among civilized human endeavors can insulate themselves against social change and social need, against an unremitting movement in which the whole of community life is being transformed.

I am convinced that the degree of our willingness to change and the quality of our responsiveness to rapidly changing social needs will determine the limits of our success in providing for good health for everyone through the development of competent people in sufficient numbers dedicated to serving the needs of the individuals who make up our nation. You could not have met at a more significant time or for a more important purpose.

# Health Legislation: Implications for Dentistry

HAL M. CHRISTENSEN, LL.B.

SEVERAL times each day during a regular session of the United States Senate, the President *pro tem* uses the words "without objection it is so ordered." Ordinarily he does this in response to a routine request made by a Senator who wants to revise and extend his remarks, or who wants to have a bill printed in full in the *Record*, or sometimes the Senator wants to have the permanent record changed because he was recorded as voting "aye" on a bill when actually he voted "nay." Such requests require unanimous consent but in usual practice the President *pro tem* never gives anybody a chance to object before he makes his ruling.

I would like to follow that procedure today. I would like to ask unanimous consent to change the assigned title of my paper by deleting the word "Implications," and substituting in lieu thereof the word "Realities" so that the amended title will read "Health Legislation: Realities for Dentistry."

Now that my amendment has been allowed without objection, I hope you will agree with me that the change is not merely routine or technical but is a change of substance.

I hope you will agree with me that it is high time that we discard the notion that dentistry is involved in government health activities only by implication or in some other peripheral way.

While I am the first to concede that on many occasions in the past, dentistry has been omitted, either deliberately or by oversight, from legislative proposals in the health field, these instances are becoming fewer and fewer. And, in fact, there are clear indications that we may have come full circle and are now being singled out for special consideration. Evidence of this is contained in several health bills now pending before the Congress and I will refer to some of these in detail in a later part of this paper.

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Mr. Christensen is Director, Washington Office, American Dental Association.



But, preliminary to that, I would like to get back for a moment to this business of "Realities for Dentistry." I wouldn't say there is an aversion to reality generally among members of the profession, but sometimes I hear comments and statements indicating that perhaps in some quarters there is an unwillingness to acknowledge it.

I believe this was indicated occasionally during this year's annual session of the American Dental Association. If my memory is accurate, there was an instance during the debate on one of the resolutions relating to dental manpower when a delegate made the observation that he was afraid that unless we, the profession, took leadership in a particular matter, the government might assume it for us. He was countered immediately by a delegate who said, in effect, that he was tired of hearing the argument that the Association must modify its policies simply because the government might be moving in this direction or that direction. Now, I suppose that if we took a poll at this workshop or in any other dental meeting, the majority of us would confess to being tired, if not downright fatigued, by the pressures that are being leveled at us not only by government but by the public at large. Weary as we are, however, the pressures, from whatever source, must be faced; or, preferably, anticipated and then faced.

My point here, of course, is not that we should prostrate ourselves every time the government offers a solution to a health problem. Obviously, there are basic principles upon which the profession must stand as a matter of self-preservation. Sometimes it is necessary to be unyielding, to take the position that we must maintain the principle or go down fighting for it. This has happened in the past and doubtless will happen in the future. But all policies, all traditions, all customary ways of doing things are not immutable principles and, as experience has shown, dentistry's interests often are best served when the profession itself ascertains the need for change and promotes its orderly development.

As all of you realize, changes are in the wind from many outside sources. Wind is a commodity that never is in short supply in Washington, and more of it than we might like is and has been blowing in our direction.

You have heard much already about the report of the National Advisory Committee on Health Manpower which was published on November 20. In announcing it, President Johnson said among other

things, "I do not need to remind you of my intense interest in health services, in health care, and in health programs in this country. We have passed some 24 major health bills in the last four years—perhaps more than passed in all other administrations put together." In making it clear that he did not want the Commission report to gather dust on the shelf, he said, "I believe the report should be required reading by all of the Cabinet members."

The President also made this interesting statement, "I observed in reviewing the report that you make one thing quite clear: that Government is not big enough to solve the problem of health care. I want to reemphasize that this morning. I am glad you said it. I certainly agree with it. I want it to be a taking off point so we can get other people besides the Government in on this job. The Government will do its full share. It is doing that starting right now insofar as I am concerned."

By way of continuing the "reality" theme in this paper, it might be interpolated here that President Johnson a year or so ago made a similar kind of off-hand comment regarding a dental health program for children, and legislation on this subject has now passed the House of Representatives and the United States Senate.

But the President went on to say with regard to the manpower report, that he was "asking every department of this Government concerned with health care to carefully evaluate and study every one of these recommendations and make a report back to the President on them."

He also asked the Commission to "try to plan how we can get this report into the private sector, how we can get it to the educators, how we can get it to all the molders of public opinion, how we can get it to all the hospital officials concerned with it, how we can get it to the insurance companies, how we can make it available to the doctors . . . how we can get it on everyone's tongue."

For myself, I didn't think I could help the President much in getting the report on everyone's tongue, but I did want to be cooperative and so I bought a small supply and sent one to each of the constituent dental societies, to Association officers and to the interested ADA councils.

I don't want to labor the details of the Report but several of its recommendations already have aroused extensive comment not only at this workshop but in the public press and elsewhere. Neither do

I want to presume to evaluate the recommendations of the Report or speculate on whether or when they will be implemented. One needs only to skip through the recommendations, however, to see the legislation that is implicit both on the federal and state levels. To name just a few examples: model medical, dental and nurse practice acts; increased financial support or incentives both for dental schools and students; federal legislation to authorize experimental programs to develop new categories of health professions; relicensure based upon continuing education or reexamination; changes in the selective service system; and peer review of the quality of health care services.

In mentioning these legislative possibilities, I make no judgment on their merit or desirability. I am not qualified to do that. I mention them only to reemphasize the "reality" that they exist, that they apparently are backed by eminent people both within and without government, and it seems likely that they will have some impact.

It also is a well-known "reality" that the Manpower Report followed close on the heels of a Report on Medical Care Prices and a National Conference on Medical Costs. While hospital and medical care costs received much of the attention in that conference, the discussions also involved health manpower as an inseparable element. Again, there were recommendations relating to auxiliary utilization, state licensure, quality review, and innovations in "health professions' education and training."

And once again, I do not wish to judge the merits of the suggestions or speculate on their implementation. They do exist, however, as "realities."

I believe that if I spent much time here discussing federal legislation authorizing programs such as Medicare, Title XIX, Head Start, and the Neighborhood Health Centers, it would be largely duplicatory and nothing new to you. All of them involve dental manpower in one respect or another. Title XIX potentially overshadows all the others, for if implemented to its limit, it would mean that the financial barriers to dental care would be removed for virtually all of our citizens. Whether that will come to pass by 1975, as envisioned under the law as it now stands, is in my opinion, conjectural. Of course, it is not conjectural at all in at least one of our states, New York, where in terms of dental benefits the 1975 goal seems to have been reached in 1967. Particularly pertinent to this Workshop is

the use of the Title XIX program by New York's Health Department to make continuing education a prerequisite for participation by providers of dental and medical services. It would seem that the state agency administering Medicaid would not ordinarily be the agency of choice to pass on the continuing qualifications of dental and medical practitioners. But it is being done in New York, and that is another "reality" (but hopefully not an irreversible one).

There is another "reality" currently on the Washington scene that has some relevance to this Workshop. It is a report published recently by a special subcommittee of the House Committee on Armed Services concerning a dental care program for dependents of military personnel.

The first recommendation puts the Department of Defense on notice that it should come up with a cost study within 60 days after the convening of the next session of Congress "and that delay beyond that deadline will not be allowed to prevent or obstruct the consideration of legislation."

Thus, we will be testifying next year on specific dependent dental care legislation. Estimates of the costs of such a program have varied but a good guess is that a maximum benefit coverage program for all active duty dependents and retirees would cost about \$240 million annually. Beneficiaries would total over 6 million people, or roughly twice the total number of persons covered by dental care plans in all of private industry. A program limited to active duty dependents would cost an estimated \$125 million, which would increase by more than 50 per cent the present government cost of providing hospital and outpatient benefits to active duty dependents under the existing Dependent Medical Care Act.

The relevance of this development to the dental manpower problem is obvious. In accordance with ADA policy, the Committee on Armed Services has recommended that civilian rather than military dentists be used to provide dependent care.

With the current economy wave in the Congress it is difficult to foretell whether dependent care legislation will be enacted next year. The reality is, however, that it is nearer than ever before.

On another legislative front, the Senate and House have passed the legislation to authorize a four-year program of pilot dental care programs for children. The bill is now pending in a House-Senate

Conference Committee, but the dental care provisions of the bill are not in issue and final enactment seems assured.

I have made the guesstimate that as much as \$70 million might be available for this program under the appropriations that are authorized in the bill for the four-year period. But this now seems unrealistic, again because of the economy wave in the Congress and the fact that I am told that for fiscal 1969, the tentative HEW budget includes only \$4 million. This does not mean, however, that the proposed children's program has no manpower significance. It was never contemplated by the ADA, as I understand it, that the government would have a major long-range role in the program except to assist the indigent. Rather, it was envisioned that the government's role would be to finance the experimental projects out of which will grow organized methods for an ultimate attack on the dental disease problem among all children. When these methods are developed, they necessarily will have a direct relationship to numbers and to distribution of dental personnel in this country.

It would appear that the time for tooling up is now, and that, of course, is the reason for being concerned and for holding Workshops such as this.

But the existing or proposed legislation dealing specifically with dentistry is not the only or perhaps the major reason for grappling with dental manpower and related problems.

Because of the massive financing arrangements, both public and private, introduced in other health areas—hospital, nursing home, and medical care—there has been a change in emphasis, and as Secretary Gardner\* said recently, "We are now forced to examine the efficiency, the productivity and the logic of the system by which care will be delivered."

The concern of Dr. John W. Gardner and others has not been triggered, of course, by problems in the dental care field but by problems, primarily financial, in the whole health field. Hospital costs, for example, are approaching \$100 per day. Health care costs are growing at about twice the rate of the gross national product. About

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\* Wilbur J. Cohen, Acting Secretary of the Department of Health Education and Welfare since the departure of Dr. John W. Gardner, was named HEW Secretary on March 22 by President Johnson.



12 years ago, the total health bill was \$17 billion; now it is around \$50 billion, and by 1975 it may be as high as \$88 billion.

Dentistry, perhaps, is in a relatively fortunate position right now because dental care costs have not risen at the rate of other health care costs, and it may be that they won't in the future. Even so, however, dentistry and dental care is and will continue to be involved in the reexamination of the health care system that is now taking place. And, it is my opinion, that whether we like it or not, whether we are tired of it or not, we will have to participate in that reexamination.

Again let me say that I don't think we can afford to ignore the crucial realities that are developing around us. Some of these realities recently were expressed by Former Secretary Gardner as follows:

Everyone seems to agree that the existing system—or lack of system—has rather marked shortcomings. But there is not yet any agreement as to what a more perfect system would look like. It seems likely that we will go through a period of experimentation and in true American fashion may end up with several variations in different parts of the country, suiting local preferences and conditions.

Whether the health care system of the future should develop around the hospital as an organizational focus, or around the payment mechanism, or around group practice plans, or around all of these in some sort of collaboration with State health planning councils—or whether other variants will emerge—is still a wide-open question.

One thing is certain. The two or three years immediately ahead must be years of intensive experimentation and data gathering. We need to know far more about the alternatives now available to us. We need to gather the kinds of data which will permit us to choose among those alternatives. We need vigorous experimentation. . . .

We cannot go on as we have in the past. New patterns will be necessary. Those who entertain some apprehension as to what the new patterns will be had better plunge in and experiment with their own preferred solutions. Standing back and condemning the solutions that others devise won't stem the tide of change.

That is the end of the quote by the man who ran the second largest department in the United States Government. I leave it to you to decide whether his advice should be heeded.

# Methods of Providing Dental Health Services: Position of the American Dental Association

F. GENE DIXON, D.D.S.

WE have a sizeable task before us. The question is, "Can we deliver?" We have all heard the often repeated statistics: 95 per cent of the people need dental services; only 40 per cent see a dentist each year; and only 25 per cent receive complete service each year.

Today, all about us, the catalyst—money—is being provided to convert that 95 per cent who need dental care into demand. Recently I attended a Conference called by the Secretary of Health, Education, and Welfare, where representatives of the private health industry and state government officials were asked to study ways of broadening health insurance through the private health industry.

The objective of the Conference was established on the premise that all Americans are entitled to the best possible health care, and that health care is recognized as one of the basic necessities of life—along with food, clothing, shelter, and education. The key phrase to those of you who have been close to this area is, "The resources are available."

This means again that the catalyst is starting to act on dental needs, creating greater and greater demands. This gives rise to questions about manpower which gives rise to Workshops of the type being held here. I do not pretend to be an authority on manpower. I only know that I have heard some fantastic projections. And it is through such Workshops that we can explore these projections to see if they are truly realistic. I commend the American College of Dentists for its vision in scheduling this meeting.

Many of us who have been associated with methods of financing dental care have long realized that the dental profession is most vul-

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nerable when money is made available, and we are unable to deliver the services.

No sooner had the dental profession learned *how* to live with dental prepayment than we moved into the era of the publicly-funded care program. This new era was thrust upon us when the federal government created the precedent of solving unmet health needs by funding care programs at the local level. No sooner had the average dentist identified the various concepts involved in dental prepayment than he was confronted with Title XVIII, Title XIX and Title V, to name just a few publicly-funded care programs with dental implications. Public health dentists and dental planners now study the prevalence and incidence of Neighborhood Health Centers, and collect data on the epidemiology of grant funds.

The dental profession is confronted with two different types of programs for the group purchase of dental care—the prepayment plan provided as a fringe benefit to employed groups, usually as a result of collective bargaining, and the publicly-funded program for the needy or medically indigent. Fortunately, much of the same philosophy and many of the same policies can be expanded to cover both types of programs.

American Dental Association policy reflects the essential difference between these two types of programs: the nature of the financing. One of the earliest prepayment policies formulated by the Association was a statement recognizing “the propriety of providing group dental care as a benefit of employment” (1). As recently as 1965 it was re-stated this way:

The American Dental Association believes that dental prepayment programs provide a sound mechanism for making dental care more readily available. The development and growth of dental prepayment plans, therefore, are encouraged, provided that they meet the principles and standards established by the dental profession in the interest of providing the best possible level of dental care (2).

The Association has also urged constituent and component societies to work with labor unions and other groups in developing sound dental prepayment plans.

The Association's policy support for programs in the public sector is found in a 1958 statement on dental care programs in public assistance. I quote:

The dental health of these individuals is a proper concern of the organized dental profession in meeting its accepted obligation to society of increas-

ing the availability of dental care to all segments of the population as rapidly as resources will permit. The development of sound programs of dental care which will make dental care available to the recipients of public assistance through the facility of the qualified, ethical dental profession is an essential deterrent to the existence of illegal dental practice (3).

Further, Association policy identifies the groups for which dental care can properly be financed by public funds. In a statement on federal financial support of personal health services, the Association recognizes "that the federal government may justifiably provide health care, or financial support for health care, of persons within the following categories" (4). Briefly, the categories include persons in military service, veterans of military service with dental disorders attributable to their service, government employees, dependents of military or government personnel, and "indigent persons through grants-in-aid support of local and state welfare health programs."

To quote further: "The Association is opposed to federal financial support of personal health services for other segments of the population."

As for planning programs in the public sector, the Association stated as long ago as 1949 that "In all major conferences that may lead to the formation of a community or state dental health program, authorized representatives appointed by constituent or component societies should participate that public health and welfare may be best protected" (5).

Constituent societies were urged to "develop policies and information on public assistance dental care programs in their states in order that they may guide the establishment and development by state welfare agencies of programs in keeping with the ADA's 'Principles for Determining the Acceptability of Plans for the Group Purchase of Dental Care'" (6). Dental societies were also urged to provide continuing guidance for the operation of the programs and to be prepared to support appropriations requests in hearings before the legislature.

The same mechanisms for providing prepaid dental services can be utilized in public as well as private programs. Association policy cites four mechanisms: dental service corporations, insurance companies, closed panels, and self-insured plans. No one mechanism is given priority in the policies, although obviously the dental profession stands in a special relationship to the professionally-sponsored dental service corporation.

The best demonstration of this special relationship is the American Dental Association's establishment and continued support of the National Association of Dental Service Plans, the coordinating agency for dental service corporations.

Another series of entities make up the new public sector of dental care programs. An impressive though by no means definitive list would include: Medicaid; the Office of Economic Opportunity Community Action programs, Head Start, and the controversial Neighborhood Health Centers; programs for children under the Elementary and Secondary Education Act; and more programs for children under the Social Security Amendments of 1965.

The program recommendation with the greatest potential for children is the ADA Dental Health Program for Children which was developed as a comprehensive plan for dental care for all children. Initially, this program will be implemented on a pilot project basis, possibly through legislation now pending in Congress. These pilot projects will take a variety of shapes and forms and again expand the spectrum of care programs in the public sector. I will comment later on the ADA program for children as a benchmark in future dental program planning.

Also pending in Congress is a proposal to provide dental benefits to dependents of military personnel.

The initiation of new private or public care programs is different, and both are rather difficult for the dentist to understand. Underlying the growth of private dental prepayment programs is a complex of labor-management negotiations for health and welfare funds, or management decisions on employee benefit planning. In either case dental benefits must compete for priority with other possible fringe benefits.

Underlying the majority of new public programs is a new concept which many dentists also do not recognize. This is the concept of community action. The O.E.O. programs, for instance, are funded by a federal agency but the initiative for local programs—and the planning, development and administration—all come from the community. The local community action groups operate independently of the public welfare or health agencies of the community. A frequent and deplorable result is lack of consultation with the health profession.

In this new era of dental care programs, an ever increasing num-



ber of patients will come into the dentist's office under new auspices. Their care will be prepaid by one of the agencies I have mentioned, whether a welfare fund or the O.E.O. Their care may be administered by an insurance carrier, a dental service corporation, or the state department of public welfare.

It is the responsibility of organized dentistry at all levels to assure the practicing dentist that his professional judgment will not be infringed upon nor his professional prerogatives circumscribed by third parties. It is the intent of the American Dental Association's policies to foster the development of sound dental care programs for groups and, at the same time, protect the integrity of private dental practice and the standards of the profession.

The longstanding "Principles for Determining the Acceptability of Programs for the Group Purchase of Dental Care" are applicable to any program. Let me repeat a few key principles:

1. The plan should be developed, maintained and promoted to the public with the advice of authorized representatives of the constituent and component societies.

2. The plan should encourage the maintenance of high standards of dental treatment.

- 6.b. The administration of the professional phases of the plan should be entirely under the control of professional personnel. Professional standards and treatment should not be under the control of non-dental administrators.

- 6.c. The methods used to authorize dental care under a plan should be limited to determining the eligibility of the patient and the extent of liability of the plan and should in no case infringe upon the professional judgment of the dentist or interfere with the dentist-patient relation.

8. The patient must have freedom to choose, within the agreed limitations of the plan, the dentist to whom he may wish to apply for treatment. Similarly, the dentist, within the same limitations, must have the right to accept patients who apply for treatment.

10. All ethically and legally qualified dentists must be eligible to participate within the agreed limitations of the plan.

12. The plan should provide for the maximum use of existing facilities (7).

From this recitation of longstanding prepayment policies, you have discerned already that one major public care program is outside these policies. This is the Neighborhood Health Center program which is being implemented in many areas of the country.

The ADA's Council on Dental Care Programs—of which I am chairman—met just two days ago. The major item on the agenda was the formulation of guidelines for Neighborhood Health Cen-

ters. To a great extent, these guidelines repeat in more specific terms for one program the criteria I have just recited for all prepayment programs.

The draft guidelines include such points as these:

1. Dental care should be provided through private practice or existing public facilities rather than at a Neighborhood Health Center when in the opinion of the local or constituent dental society such existing facilities are available.
2. Where a Neighborhood Health Center is established, eligible patients also should have the option to obtain care through private dental offices.
3. Dental aspects of Neighborhood Health Centers should be developed with consultation and cooperation of state and local dental societies.

It was undoubtedly the reaction to the Neighborhood Health Centers which triggered the amendment at the 1967 annual session of the Association's policy on closed panels. With a deletion of one sentence and the addition of two phrases, the dental profession's opposition to closed panels was stated more vigorously. The new language is as follows (8):

A closed panel practice is established when patients are obtained through the provisions of an agreement with a given group and when such agreement does not provide for the purchase of dental care by the patients from any other source.

The American Dental Association is opposed in principle to closed panel systems because of the essential limitation which this method of practice imposes on the patient. Closed panel practices must not be established except under special circumstances to meet the needs which cannot be met in any other way, the justification of such circumstances to be determined by constituent and component societies (8).

Another prepayment policy on the use of practitioners and facilities is relevant here. This policy states: "The development of dental prepayment plans in which dentists in private practice participate is preferred to the establishment of facilities with salaried dentists (9)."

The prepayment mechanism with the greatest potential for publicly funded programs is the dental service corporation. This dental society sponsored mechanism gives the profession an opportunity to formulate acceptable dental benefit programs and gives public agencies the assurance that a dental program is acceptable to the profession.

The role of the dental service corporation as fiscal intermediary for publicly-funded programs is supported—and encouraged—by

Association policy. A short resolution passed by the House in 1966 directs that "the American Dental Association encourages the participation of constituent society sponsored dental service corporations in the administration of the dental elements of all publicly-funded health care programs wherever such participation is feasible (10)."

Another Association policy adopted the same year emphasizes "the need for professional leadership and direction in the administration of present and future dental care programs financed by government (11)." The policy continues that "unless the dental profession has a mechanism available in each state to administer dental care programs, other methods will be used that may not be acceptable to the profession."

This statement concludes with the recommendation that state dental societies without corporations "take cognizance of federal legislation that has an application to dental care, recognize the necessity of professional direction in the administration of programs developed under such legislation and take steps to develop a dental service corporation so that professionally sponsored mechanisms will be available to assure that group dental care programs financed by private or public funds meet the standards set by the dental profession."

So far, 12 of the 18 operating service corporations are administering public programs for almost 230,000 eligible beneficiaries. This includes more than 100 Head Start contracts and one Title XIX contract in the state of Washington.

A key directive for all dental care programs is the policy on fee concept for priority consideration. This 1966 policy states:

*Resolved*, that in future negotiations with public or private agencies in relation to dental care programs, it shall be the policy of the American Dental Association that reimbursement for professional services on the basis of usual and customary fees shall be given priority consideration (12).

It was partly to support this concept that a new entity was introduced into the group programs field by the 1967 House of Delegates. This is the dental society review committee for all prepayment programs. The Council on Dental Care Programs recommended the policy creating the dental society review committee "to provide for the review of reasonable differences of opinion between a third party agency and a dentist (13)." This policy defines third party agencies as insurance carriers, dental service corporations, ad-

ministrators of health and welfare trusts, and government agencies.

The function of the review committee is "to determine the relevancy of the usual, customary and reasonable fee and of treatment procedures to the terms of the contract."

The full range of ADA policies relevant to dental care programs as well as the dental profession's highest standards of care are reflected in one program, the ADA Dental Health Program for Children (14).

For instance, the document points out the challenge of the program for prepayment plans for both indigent and nonindigent children. Thousands of indigent children are already eligible for dental benefits through Head Start or other public programs administered by dental service corporations. It will be necessary to develop individual or family coverage for nonindigent children and also to develop incentives for parents to purchase the insurance.

It is reiterated in the ADA program that no government funds should finance services for children whose parents can afford to pay for care. One of the principles of the program states that "fiscal responsibility for the dental care of nonindigent children and families must continue to lie with the individual, the family and private and voluntary agencies." The program reiterates that "funding of a dental health program for nonindigent children must be derived from the private sector of the economy—on a voluntary basis." Again, the program states "federal financing for nonindigent children is not available under existing legislation. No legislation should be sought to provide federal funds for the dental care of nonindigent children."

I repeat these statements not only because there has been considerable misunderstanding on this point, but because in the policies of the Association, the Dental Health Program for Children stands out as the dental profession's ideal dental care program.

Many of the recommendations set forth in the program could be used in other types of dental care programs, including such points as professional guidance and consultation at all levels in program planning; full use of preventive measures; periodic examinations; expansion of the productivity of dental personnel; advisory committees at national, state, and local levels; and suggestions for pilot projects.

As an appropriate conclusion to my presentation and an appropriate preface to this Workshop in its consideration of dental care pro-

grams, I quote a section on target objectives from the preface to the ADA Dental Health Program for Children. The reference is to the children's program, but these objectives may well be considered in all our planning:

"It should fulfill the highest obligation of the dental profession and the Association to provide the best possible professional advice in the development and operation of the program. It should meet the challenge of a nation which is on the threshold of a deep commitment to the improvement of dental health, particularly of the younger age groups. It should enable the dental profession to provide the highest quality of service of which American dentistry is capable. It should maintain the integrity and standards of private dental practice. It should safeguard the right of the patient to choose his practitioner and the right of the practitioner to choose his patient.

"The program should embody in full measure the essential elements for the prevention and control of dental diseases on the basis of an organized and continuing program for dental research, dental health education, preventive dentistry and dental care. It should apply the vast knowledge and skill of American dentistry, together with the other health sciences, to the advancement of personal and national dental health. It should offer a program consonant with the American tradition of minimum expenditure to produce maximum good for the nation."

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# The Need, Demand, and Availability of Dental Health Services

GEORGE E. MITCHELL, D.M.D. and RUTH D. BOTHWELL

ONE of the first, and surely the most influential of the public statements calling attention to the developing crisis in health manpower was made by a member of this Workshop just a little over ten years ago. It was made in a paper entitled, much as mine is today, "Dental Needs, Demands, and Resources." The message contained in that paper soon reached the entire profession through publications of the Commission on The Survey of Dentistry. Consequently, just five years later, when the deliverer of that early warning again found himself addressing the same subject before a workshop, the working conditions had changed considerably. For he had become just one of many professional leaders assembled to consider what might be done to head off the by-then widely recognized threat of a serious dentist shortage. Nor was he any longer alone in his interest in considering specifically what role the dental auxiliary might play in the action taken to forestall the development of the shortage.

That speaker, incidentally, was Dr. W. J. Pelton, who must feel a little like Sisyphus, since his assignment at this Workshop is to lead the study group charged with assessing that now familiar trio—need, demand and supply.

I mention this bit of recent history not only because it proves a handy way to get into the subject I share with Dr. Pelton, but because it underscores the changing situation of the past ten years. As a result, it is an effective reminder of how rapidly the interaction of social change and professional response can alter our perspectives.

In the space of the ten years or so that have elapsed since dentists first began to accept the possibility of a man power shortage, we have witnessed profound changes affecting both the level of demand, and the ability of the profession to face a rising level of demands for dental service.

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To begin with, there have been the changes that so many of you have worked so hard to bring about—changes affecting the future supply of dental manpower. We have launched a massive construction program to expand and modernize our capacity to educate new health professionals. We have buttressed this action with programs of scholarships and loans to insure an adequate supply of students. We have added programs of financial assistance to strengthen and support the efforts of dental schools to improve the quality of undergraduate education, and to insure its relevance in a changing world.

One important change, as you know, has been the introduction of programs to teach undergraduate dental students to work effectively with chairside assistants. Ten years ago, only a handful of schools offered such training. Today it is a required course in every dental school in the country. The heightened interest in auxiliaries has, in turn, sparked a major expansion in auxiliary education. And perhaps most important of all, there has developed within the profession itself a new open-mindedness, a new willingness to consider at least some redefinition of the auxiliary's role in the provision of dental services.

These are accomplishments which, given time, might themselves have been sufficient to resolve most of our difficulties. Freshman enrollment in dental schools, which was 3,600 ten years ago, now stands at approximately 4,000. And according to the best current information on school expansion plans, enrollments will reach at least 5,900 by the end of the 1970s. As a result, we will graduate nearly 54,000 dentists between now and 1980, some 10,250 more than we could have counted upon had this estimate been made ten years ago. This increase, after allowing for deaths in the current supply, will enable our professional force to grow from approximately 110,000 at the present time to nearly 137,000, of whom approximately 113,000 will be in active non-federal practice. And, three in every five dentists practicing in 1980 will have had undergraduate training in the use of auxiliaries.

At the same time, our supply of auxiliaries will be augmented by the graduates of at least 58 existing dental hygiene training programs, 25 of them established just within the last decade, and by another 26 which can be expected to begin operation within the coming decade. Freshman dental hygiene enrollment, which stood

at less than 1,200 ten years ago, is already pushing 2,200. By the end of the 1970s it will climb to at least 3,200.

The vast majority of dental assistants and dental laboratory technicians are still being trained on the job. However, a great many new training programs are being established for dental assistants; the number of approved programs has grown to 77 from 26 in the past five years. With dental laboratory technicians, the story is somewhat different. The move to formalize their training is only now beginning to gain momentum. Five new school-based programs have been established just since 1964.

Including dental assistants and technicians who will have been trained on the job, the total dental force can be expected to include upwards of 360,000 dentists and auxiliaries by the end of the 1970s, nearly 40 per cent more than at present and some 80 per cent more than we had a decade ago.

Yet, the fact remains that by the late 1970s we are likely to be rocked by a manpower crisis far more severe than the one we have been working so hard to avert. This is not to say that we have been off-base in the assessments we have made, but only that our assessments, as so often happens, have not allowed adequately for the quickening pace of social change.

Certainly, in all of our manpower planning for the past decade we have correctly gauged the probable impact upon dentist resources of the demands created by a larger, better educated, more affluent population—that is, the demands which are essentially a by-product of the changing social and economic characteristics of the population. But what we did not recognize before and still have not fully recognized, is the possibility that new and, in some ways, more urgent demands for care would arise among a previously unheard from segment of the population—those people who cannot pay for services and who have generally been considered too poorly educated, too ignorant, to value dental health enough to be concerned because dental services were not available.

Yet, today, we are committed through public policy to supply needed services not just to the poor and the uneducated, but to all those who are constrained to reside in areas of poverty—areas where few dentists willingly choose to practice. We have, in fact, passed beyond the stage of simple commitment. We have begun to act. In Head Start, in the Job Corps, in some 30 comprehensive care proj-

ects supported by the Children's Bureau—in all of these public programs, we have begun to take the action necessary to meet the health needs of the children of the poor. Moreover, in the Office of Economic Opportunity's neighborhood health centers, in the Appalachian program, in the expanding coverage of Medicaid, in the migrant and rural health programs, we are taking the first steps toward meeting the needs of disadvantaged persons of every age.

There is another long-neglected group whose needs must be reckoned with in future years. These are the people whose mental or physical condition makes treatment within the traditional office setting either difficult or impossible—the mentally retarded, the physically and emotionally handicapped, and all those who are either too ill or too infirm to come to the dentist's office for treatment.

There have been many expressions of concern over their plight. There have even been timid and soon-abandoned attempts to provide services to these so-called problem patients. Yet the fact remains that we have never given serious thought to the resources required in meeting the dental needs of problem groups. Neither have we weighed the possibility that real pressure might be exerted upon the profession to supply the necessary resources. But here, too, the public conscience is beginning to stir. The new centers for the care of the mentally retarded are an eloquent expression of this public concern.

This coming decade will unquestionably see the initiation of an all-out effort to transform the current patchwork of stop-gap measures into a national network of comprehensive health programs. The network will be designed to make health care available, not only to the growing band of private consumers, but to all those who thus far have remained beyond the capability, and therefore beyond the concern, of the private health system. Legislation to spur this action is already on the books. It is legislation, I might add, which will of necessity have as great an impact on the supply of resources as it will have upon the demand for services.

Of particular interest to dentists are the actions being taken by this Congress to establish a national dental health program for children. The program being considered is very much like the one initially proposed by the American Dental Association. If that program is successful, all children of pre-school and elementary school age may

be routinely receiving comprehensive dental service by the end of the 1970s. And, of course, there is Medicare. Though this legislation does not now contain any significant dental provisions, the pattern is undoubtedly set, and the provision of dental care to the aged must be considered the function of time. On the day that Medicare is expanded to include dental services, one of the largest of those segments of the population not now receiving adequate care will move as a group into the active dental market.

Of less obvious but potentially great significance is the legislation providing federal monies for the development and continuous reappraisal of comprehensive health plans. To those of us in a health field as frequently ignored as dentistry, that word "comprehensive" is sweet, indeed. It means the opportunity to assure an equitable flow of public funds and public effort into the solution of dental health problems. I say "the opportunity to assure" rather than "assure" because whatever success we have in developing and implementing plans specifically designed to improve dental health will be ultimately determined by the initiative, the perseverance, and the vision of local dental leaders, by their willingness to participate in state and local planning activities, and by their readiness to accept and foster the kinds of actions that long-term solutions require.

Yet, whether, or to what extent dentists participate in planning, the fact remains that the very word "comprehensive" stands as a charge to those responsible for health planning—it is a charge which should make it difficult or, I hope, even impossible, to ignore dental services when new health care programs are established, or to overlook the need for dental facilities and dental staffs when new hospitals and health centers are built. In other words, it is safe to say that were dental services to be considered and planned only as an appendage to medical care, the concept of comprehensive planning will nonetheless require the provision of a larger volume of dental services than we can now anticipate, and it will do so in every state in the Union.

Dental service demands are also likely to be influenced by the recently enacted model cities legislation which provides the initial funds for the rebuilding of our major urban centers. The sections of cities marked for redevelopment are blighted areas which at best, are inadequately served by our present health system. Redevelopment plans, therefore, are expected to include provisions for health



facilities sufficient to guarantee the accessibility of services to all area residents. Just how much effect the model cities program will have on the supply and demand for dental services, we are not yet in a position to know.

What we do know, however—and it applies with equal force to the many other programs we are undertaking—is the direction and nature of the changes entailed. We know that by deliberately stepping up the pace of social progress we will inevitably impose still greater demands upon a health services system that is already hard put to keep up with the slower, more measured pace of evolutionary change.

Of course, the truth is that this slower, more measured pace is anything but slow. We have only to consider the probable impact of projected changes in family income and educational status upon future levels of dental service demands to realize how rapidly the changes come.

By 1980, the proportion of families with incomes of less than \$4,000 will be cut in half while the proportion of families with incomes of \$10,000 or more will more than double. Should the population in 1980 continue to seek care at the rates measured in the most recent National Health Survey, then the average per capita demand for dental care will increase from the rate of 1.58 visits per year as measured in the 1963-64 Survey to approximately 2.28 visits per person per year in 1980.

At the same time, higher educational levels will result in additional independent increases in care demands. The added effect of rising educational levels will be to increase the number of visits per person per year by another .08 bringing the overall total annual visits to 2.36. Now these figures sound small but they represent an increase of 49 per cent per person. If this rate of visits is applied to the Census Bureau's Series B projection of the population for 1980 (adjusted to exclude an estimate for armed forces and institutionalized population), the total volume of visits in 1980 will reach almost 550,000, compared with about 300,000 today.

A near doubling of the treatment load by 1980 is burden enough. But this is only part of the story, for the growth of organized care programs—both public and private—will bring a massive influx of additional patient visits. Estimates prepared by Mr. Roger Cole of the Division of Dental Health suggest that the average number of

visits per person per year will increase by from 5 to 20 per cent. If so, the total demands created will range from a minimum of 18 million to as many as 106 million additional visits per years.

If you consider the fact that today's dentist handles some 3,300 visits per year, the additional visits created just by the growth of organized care plans would require the services of from 5,500 to 29,000 dentists. To meet the level of demand corresponding to the higher income and education levels of the population, 165,000 dentists would be needed.

In total then, demands in 1980 will be equivalent to the services provided by from 170,500 to 194,000 dentists working at today's rate of productivity. Since only 113,000 practicing dentists will be available in 1980, a good share of the additional service requirements must be met through higher levels of dentist productivity. At a minimum, dentist productivity must increase by 56 per cent, and at the higher level of demand, by 81 per cent. The latter figure is almost twice the most generous estimate yet made of increases achieved in productivity over the past 15 years.

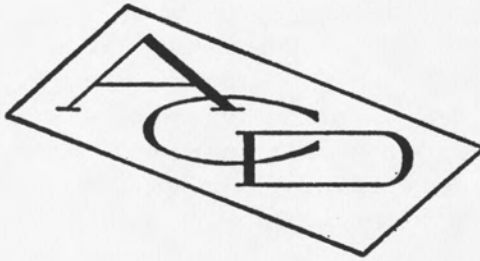
When I consider figures like these on a bad Friday the size of the job ahead of us rather stuns me. However, since it must be done, we can and we will succeed at it. After all, if the average dentist could raise his productivity to the point where he could manage 5,800 visits per year, then 113,000 dentists could manage 656 million visits. And practitioners can realize such an increase in productivity *if*—and this is a most significant *if*—they have learned to work successfully with a team of four auxiliaries.

We can move many more steps forward simply by preventing the occurrence of the disease we will have to treat. Certainly with respect to dental caries the picture looks brighter than ever before. Most of our major cities have already fluoridated, and now several states are enacting mandatory fluoridation laws. Furthermore, new and extremely effective methods for providing fluoridation are being developed. It may well be that in the near future no one need be denied this major safeguard against dental disease.

Encouraging as the prospects are for fluoridation, we cannot expect a significant reduction in total dental demands within a single decade. But if we begin now to give fluoridation a top priority in all of our programming—and particularly those directed to children—the decade beyond 1980 will see dramatic results.

The national dental health program for children is a perfect vehicle. It would combine the benefits offered by fluoridation with a care program which would prevent the accrual of need. By 1990, a whole generation will have had a lifetime of comprehensive dental health protection.

Looking from that point still further into the future it is not difficult to foresee the day when demand and need can be equated. And when that balance is achieved, we can marshal supplies of manpower adequate to maintain our advantage.



# Increasing the Productivity of Dental Personnel

PAUL E. HAMMONS, M.S., D.D.S. and  
HOMER JAMISON, D.D.S., Dr.P.H.

ORGANIZED dentistry, governmental agencies, and the people are concerned about methods of increasing the availability of dental care; however, they are not interested in any method which will increase the availability of services at the expense of decreasing the quality of such services. In this frame of reference the University of Alabama School of Dentistry developed a study to determine whether specially trained dental auxiliaries could perform certain duties as well as members of the dental profession.

## HISTORY OF NEW DUTIES OF DENTAL AUXILIARIES

The first organized program of dental service which included new duties for dental auxiliaries was started by the Department of Health of New Zealand in 1921 (5). This method was chosen because a review of the availability of dentists and the country's ability to train them indicated that it would be impossible to secure the dentists needed to provide adequate dental care for the school children. The specially trained dental auxiliary is designated as a "Dental Nurse." Her duties include instructing in oral hygiene, examining the oral structures, preparing uncomplicated cavities and inserting the restorative materials, extracting teeth under local anesthesia, and providing prophylactic treatments. These services are rendered without constant direct supervision by a dentist.

Following the activation of the National Health Service in Great Britain, a shortage of dental manpower seemed inevitable because of the conversion of the need for conservative dental care to effective demand. Evidently, it was not feasible to expand the educational

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The information here was presented in essentially the same form to the Dental Health Section of the American Public Health Association.

program in dentistry sufficiently to provide this type of service. It was decided therefore to develop an experimental program to train and employ special dental auxiliaries to determine their possible value to the community (8). The period of training and the curriculum were similar to the training of New Zealand dental nurses. The training program used in New Zealand was modified to train the auxiliaries to work under the supervision of a registered dentist and excluded diagnosing and planning treatment. Presently the experimental program is nearing completion and its incorporation into the School Dental Service is anticipated (3).

The National Health and Medical Research Council of Australia recently recognized the need for increased dental services in that country, and concluded that it was impossible to produce a sufficient number of dentists to provide the needed dental care. It recommended that consideration be given to the utilization of auxiliary personnel in the form of the school dental nurse in comprehensive and systematic programs for dental care of Australian children (11). To date, four Australian states have passed acts which permit the use of dental auxiliaries similar to the New Zealand school dental nurse. In one of these states, Western Australia, the auxiliary will be permitted to work in private practice in association with a dentist as well as in public dental service (4).

In 1964 the Canadian Royal Commission on Health Services recommended the use of new dental auxiliaries to work directly under the supervision of dentists in a children's dental health service. It was further recommended that such auxiliaries be trained by a dental school faculty to qualify them to prepare cavities and place restorations for carious lesions (10). To date, these recommendations for the nationwide program have not been implemented.

#### EXPERIMENTAL PROGRAMS IN NORTH AMERICA

Three experimental programs on new duties for auxiliary personnel have been completed in North America. These programs were conducted by the United States Navy Dental Corps at Great Lakes, Illinois (9), the Royal Canadian Dental Corps (2), and the Division of Indian Health of the United States Public Health Service (1). In all of these programs diagnosis and treatment planning were completed by dentists and the new duties excluded the severance of hard and soft tissues, and the administration of anesthetic agents and



other drugs. Evidently, these three studies were designed and conducted independently with similar objectives and concurring conclusions.

#### THE ALABAMA EXPERIENCE

Prior to investigating expanded functions for dental auxiliaries, the University of Alabama School of Dentistry completed two studies about the effect of trained conventional dental assistants on the clinical performance of dental students (6). The results of these studies suggested the qualitative and quantitative performances of dental students improved when trained dental assistants were used.

The objective of the dental auxiliary research program, which was started in 1963, was to investigate the potential of specially trained dental auxiliaries to perform certain operations traditionally performed by dentists. These operations were:

1. Placing and removing rubber dams.
2. Placing and removing temporary restorations.
3. Placing and removing matrix bands.
4. Condensing and carving amalgam restorations in previously prepared teeth.
5. Placing of silicate and acrylic restorations in previously prepared teeth.
6. Applying the final finish and polish to the previously listed restorations.

These specific functions were selected because it was the consensus that they were reparable, and could be either corrected or redone without undue harm to the patient's health.

Since it was deemed essential to obtain personnel whose characteristics were especially suited for this type of work, extreme care was exercised in the selection of trainees. A consultant psychologist was employed to select and administer appropriate tests. The tests administered were: (1) a basic intelligence test, the results of which were not significantly influenced by previous education; (2) aptitude tests which tested the ability to make finely coordinated hand movements and to continue an unchallenging task after fatigue commenced; and (3) a personality test which identified friendly and outgoing individuals with good habits of discipline. Seven trainees were selected on the basis of test scores, personal interviews, and scholastic records.

A two year training program was designed to prepare these trainees to perform the previously listed functions. The training program was divided into: (1) introductory basic sciences and preclinical technic; (2) advanced preclinical instruction; and (3) supervised clinical instruction. The first year of training was devoted to introductory basic science and preclinical technic instruction which included anatomy and physiology, microbiology, oral pathology, dental anatomy, dental materials, diet and nutrition, personal hygiene, radiographic technic, and preventive dentistry. Counsel of educators and psychologists, deductive reasoning, and experience suggested that the available personnel suitable for this type of work would be high school graduates without further education.

Although performance of expanded functions does not require that the dental auxiliary have a scientific background comparable to a dentist, it is essential that she receive training consistent with the responsibilities delegated to her. It seemed unfair to the patient, the profession, and the auxiliary to expect her to appreciate tissue integrity when she might not understand the meaning of either tissue or integrity.

The knowledge and skills acquired during the first year were supplemented and reinforced in the advanced preclinical training which was presented during the first half of the second year of training. Preclinical technics of operative dentistry were emphasized, and instruction was given in periodontology, sterilization, ethics and jurisprudence, instrumentation, and applied dental materials. The final half year of training was devoted to supervised clinical instruction. The initial clinical instruction was conducted using manikins attached to reclining dental chairs. At this time the auxiliaries were taught to use conventional chairside assistants and continued to use them throughout the data-collecting period.

Two trainees withdrew from the program during the first year to marry; one of these girls had already experienced scholastic difficulty. Interestingly, these two girls were the only trainees who had formal education beyond high school.

The auxiliaries operated in a clinic organized to simulate a dental office in which a dentist completed the operations that required his knowledge and skills while carefully supervising the activities of the auxiliaries. This clinic was located in a building which also accommodated a facility in which advanced undergraduate dental students

operated. A specially designed evaluation room, accessible to both clinics, was located on a corridor to the outside of the building. The evaluator entered through this corridor which did not allow a view of any operatories and waiting rooms; therefore, the evaluator was unaware of the area in which the patient had received treatment. All patients were requested not to converse with the evaluator and the recording assistant.

Private dental practitioners who were not members of the faculty of the University were selected as evaluators. Each of these men had been elected to at least one office of trust in either the state or a constituent dental society. Previously prepared written criteria were provided and discussed with each evaluator before he participated in the program. The evaluator's observations were recorded by a clerk on previously prepared forms and simultaneously recorded on audio tape. The completed record of each procedure was returned immediately to another clerk who placed it in a locked file.

In the routine functioning of the two clinics as the various treatment procedures were completed they were evaluated in sequence. For example, when a cavity preparation had been completed the rubber dam was placed and whenever indicated a matrix was applied. These procedures were evaluated and after the restoration had been inserted the patient was returned to the evaluation room for an assessment of the unfinished restoration. During an evaluation the evaluator judged each aspect as either excellent, acceptable, unacceptable, or inapplicable. The category "inapplicable" was provided to avoid the potentially embarrassing and detrimental situation in which an evaluator might be required to make assessment without confidence and conviction.

A list of all of the aspects evaluated for each procedure is beyond the scope of this report; they have been supplied in a previous report (7). The aspects evaluated for the unfinished amalgam restoration provide a meaningful example. They are: anatomical carving, marginal ridge relation, contact, contour, marginal integrity, condensation, occlusion, tissue integrity, post-operative lavage, surface smoothness and, in some instances, consistency and mix.

As the investigation progressed, periodically the accumulated data were tabulated, summarized, and reviewed for evidence of trends and changes in such trends. Because of the hazard of information being fed back into the project and biasing the results, descriptions of the

evident trends were neither revealed to the director of the program nor released to other people until sufficient data had been collected to permit defensible conclusions.

When the data were analyzed, the proportions of excellent ratings consistently favored the specially trained dental auxiliary and the differences usually were statistically significant. The proportions of unacceptable scores were small for both groups and usually favored the dental auxiliary, but in an appreciable number of instances this comparison favored the dental students.

#### SUMMARY AND CONCLUSIONS

Five female high school graduates completed a two year training program designed to prepare them to perform certain clinical procedures traditionally completed by dentists. The quality of their performance in inserting amalgam restorations, inserting silicate cement restorations, finishing amalgam restorations, finishing silicate cement restorations, inserting temporary restorations, placing matrix bands and rubber dams was compared with the quality of performance of advanced undergraduate dental students for the same procedures.

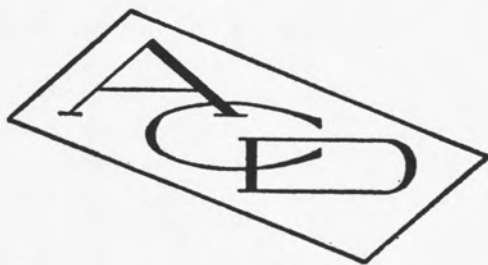
It was concluded that carefully selected female high school graduates can be trained to perform qualitatively at least equal to advanced undergraduate dental students in the operations that follow: (1) placing rubber dams; (2) placing matrix bands; (3) inserting and finishing restorations in previously prepared teeth; (4) condensing and carving amalgam restorations in previously prepared teeth; (5) placing silicate cement restorations in previously prepared teeth; and (6) applying the final finish and polish to restorations of amalgam and silicate cement.

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# The Development and Administration Of Dental Programs

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THE dental profession, and all who are concerned with dental health conditions, are at a crossroads in the development of public care programs. Behind are roughly two major periods of development. The first, which covered the initial two centuries of our national history, saw the very slow development of public programs to aid the needy. The dependence on the efforts of private charities slowly relaxed as it became evident that it was necessary to supplement private efforts with programs supported by local and state government. Because they were locally financed a wide variety of organizational patterns for the delivery of the limited amount of care available were developed.

The second period covers the thirty years which followed the passage of the original Social Security Act in 1935. This Act established a national policy that meeting the needs of deprived segments of society was a joint responsibility of federal and state government. The grants-in-aid mechanism was developed to permit federal participation in state and local programs while retaining a maximum of local authority. Local authority was, however, exercised within the ground rules established by Congress and federal agencies. These ground rules resulted in the development of the conventional "old line" agencies of health and welfare. They also resulted in a categorical approach to both welfare and health. Appropriations were made not to improve the general health of the public but to attack specific health problems such as tuberculosis, heart disease, and cancer. Similarly, financial aid to the needy was not equally available to all, but was available primarily for particular kinds of needy persons such as dependent children or the needy blind.

## RECENT TRENDS IN HEALTH CARE

Today we have just entered a new era. The future is largely uncharted and can be seen only in the broadest outline. The develop-

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ment of health care programs of the future will be determined by three important factors: (1) the crystalization of new public attitudes toward poverty and health care; (2) the development of new mechanisms and agencies for the delivery of health (including dental health) service; and (3) the restructuring of the traditional health and welfare agencies.

For many years it has been accepted—stoically, if not enthusiastically—that the community had a responsibility to see that no one was forced to exist on less than a subsistent level. Individuals could not be allowed to starve and they must at least have a roof over their heads and clothes on their back. The programs that were developed and the public support for them accepted the ancient biblical dictum that “. . . ye have the poor always with you.”

An entirely new concept of the problems of poverty has developed in recent years—a concept that poverty is a problem that can be cured, not an inevitable by-product of society that must be tolerated. This changing public concept has particularly grave implications for the health professions because of an accompanying change in attitude toward health care. There appears to be a rather general acceptance of the fact that comprehensive health services are a basic right of every individual, rather than a luxury to be enjoyed by those affluent enough to afford care. The provision of health services for the needy, therefore, now is seen in a dual light—assuring the receipt of comprehensive care by the entire population and at the same time utilizing the provision of health services as a weapon in the “war on poverty.”

The second major change in the organization and delivery of health services is the entry of new agencies and new approaches to the financing of health care. The Office of Economic Opportunity has by-passed traditional federal, state, and local health authorities to aid a variety of citizens' groups in establishing and funding health care programs in activities such as Project Head Start and the Job Corps. A measure of the impact of this agency can be seen by the fact that although less than three years old, it has spent approximately 1.6 billion dollars in the last fiscal year (1).

The most radical development has been the establishment of neighborhood health centers in a variety of settings to serve both the urban and the rural poor. A neighborhood health center is, in essence, a closed panel clinic serving an area of poverty, staffed by

salaried dentists, and funded primarily directly by the federal government. The staff of the American Dental Association has pointed out that: "The rapid establishment of neighborhood health centers in a number of urban areas has given rise to questions concerning the most appropriate methods by which the nation can best extend more health care services to the poor, the degree to which O.E.O. consults with other government agencies and private health groups before choosing a particular method, and the basic role of the private practice system in this endeavor" (1).

Traditionally, there has been a varied pattern in the distribution of dental health programs between those operated by health departments and those operated by public school systems. This fragmentation has been encouraged and accelerated by the fact that a school system may apply for federal funds under Title I of the Educational Assistance Act of 1965 to provide health services.

In addition to the new approaches in agency sponsorship of health programs, we are undergoing a restructuring of the traditional "old line" health and welfare agencies. The categorical approach to funding programs of public health agencies has been replaced by a system of block grants, but the allocation of these grants at the state level is to be made by a health planning agency designated by the Governor and supported by specific federal funding. The most significant factor in this new legislation probably is the requirement that 51 per cent of the policy-making planning body must be drawn from individuals not professionally engaged in the field of health. It is difficult to predict what changes in health programs may come about because of the new health planning legislation. There appears to have been states in which boards of health, dominated by physicians, were able to exercise almost a veto power for the medical profession over health programs. Certainly, in these areas, a different type of health planning may be anticipated in the future.

In paying for health services, state welfare agencies will move away from a categorical approach to eligibility. As all of you are aware, the legislation passed in 1965 calls for a marked escalation of health services. First, all those eligible for financial aid under the categorical approach are to be offered comprehensive health services. The second phase will be to create a new group of "medically indigent" persons who will qualify for health care even if they are not eligible for cash payments. The most sobering aspect of the future is

the almost certain possibility that within a few years every needy person in the United States will be eligible to receive comprehensive health services funded through state welfare departments. It is difficult to predict how this development will mesh with the plans for experimental programs to develop a national dental care plan for children as recommended by the American Dental Association.

#### PUBLIC ATTITUDES AND THE FUTURE OF PRIVATE PRACTICE

The dental profession is facing the same pressures for expanded oral health care programs that have faced the professions in other countries at an earlier point in time. The developments in other countries may be expected to have some impact on the future of dentistry in the Western Hemisphere. In most of the developed countries, organized public programs have been created to assure that all school children receive treatment, usually without cost. In several instances, the development of these programs have resulted in the transfer of a significant sector of the population from private practice to salaried clinic practice. In other instances, the programs have resulted in rather significant constraints on the development and operation of private practice. Several countries have attempted to solve the manpower shortages resulting from public programs by creating auxiliaries, with less than a dental education, to provide primary care for children—with or without close supervision by a dentist.

Although developments in other countries may have an impact on trends in this country, it would be unwise to assume that this automatically would be so. Every nation has a unique history, culture, and social structure. Dentistry in the United States will develop in response to the unique characteristics of the nation. A brief glance at some of these characteristics may be useful.

First, we are a large nation and a nation that is growing rapidly. Rapid growth has made it difficult to keep pace in providing essential services (including health) for the expanded population. The nation is becoming increasingly urbanized. Within the urban area, dentists have tended to follow the exodus of the affluent to suburban areas, leaving few professional resources to serve the inner-city. It is in the ghettos of the inner-city, however, where the large masses of the urban poor, who are the target of government treatment programs, are confined. A combination of these factors—changing pub-

lic attitudes, the development of new health programs, changes in both the size and distribution of the population—have combined to create a sturdy challenge to the ability of the private practice system to adapt effectively to meet public needs.

Although the private practice system may be sorely tried, there are aspects of the American culture which would suggest that the system may be able to adapt to public needs more effectively and with less drastic change than has occurred in other countries. The United States is an enormously wealthy nation—a nation that could, if it wished, fight both a war in Asia and a war on poverty in the urban ghettos. It can thus afford the pluralistic approach to solving problems that has characterized recent history. Our society is committed to providing most of its goods and services through the operation of a free competitive market. Where the provision of essential collective goods, such as education, welfare, and health, do not fit well into the system of a free competition market, ingenious and often strange forms of accommodation have arisen. Sasuly and Hopkins have described this phenomena as: "In pluralistic American society, with its lingering preferences for private enterprise, for a variety of choice over uniformity, for incremental over radical problem-solving, for a subscription over prescription, the institutional arrangements devised to correct for failure of the free competitive market are many and varied."

It is useful to note that the dental profession in the United States has demonstrated unusual leadership in promoting dentistry for children. We have, for example, more pedodontists than the rest of the world combined.

#### LEADERSHIP FOR INNOVATION

*The Profession:* It seems apparent that new approaches to the delivery of dental health care need to be developed—and developed with unprecedented rapidity. Because of budget limitations, constraints imposed by overall policy considerations and personnel system requirements, official health agencies often find it difficult to innovate with ease or rapidity. For this reason, the key leadership role will probably fall on the entire dental profession—on practicing dentists, their representatives, and their officers.

The first imperative is merely the recognition of the necessity for change and a willingness to examine new proposals objectively and



unemotionally. In this crucial period, the profession cannot afford the luxury of the shallow and emotional reasoning of those that Harold Hillenbrand has termed "dental fundamentalists" because they oppose any change, merely because it disturbs the status quo.

More important is the need for a careful examination of the potentialities of fee-for-service private practice in meeting the needs of the public—particularly the segment termed "deprived." It appears that the neighborhood health centers are being established on the assumption that traditional private practice cannot be adapted to meeting the needs of the poor. Perhaps this assumption is true; but it will be tragic if the profession surrenders this segment of the population to salaried, closed-panel practice merely because it is unwilling to be sufficiently innovative to adapt to changing public demands.

Some of the characteristics of the neighborhood health centers suggest the challenge to the profession. First, they are located in the area of poverty. In an era of tight supply, it is questionable whether adequate numbers of dentists will be willing to locate a solo practice in the slum areas where the characteristics of practice may not be completely satisfying.

The centers combine the full range of health services in one physical setting in order to reduce barriers to utilization. The middle class suburban wife, with a second car, can manage a complicated schedule of visits to the pediatrician in one place, the internist in another, and the dentist in still another. The Negro mother with five children, but no car, and who is head of a fatherless household probably cannot. Although the advantages of group practice, and also association with other health professionals, has been pointed to for years, dentistry has made little progress in moving away from completely independent solo practice.

The neighborhood centers will utilize a wide range of supporting services to educate patients, counsel them, provide transportation, etc. Agencies such as health department and crippled children commissions have demonstrated that publicly-funded supporting services can be integrated with private health care facilities, but difficult problems of physical separation and poor communications have plagued these efforts. Imaginative planning should permit this type of coordination between publicly employed aides and dentists in private practice.

Finally, a fine balance must be struck between, under, and over

accommodating to the special needs of the poor. Unless some special arrangements (such as transportation) are made, the population to be served cannot utilize the care that is available. On the other hand, the circumstances under which treatment is provided should parallel "normal" conditions as closely as possible. Regular office hours should be maintained and the poor recipient should be integrated into the regular patient load as nearly as possible. It should be recognized that care provided under institutionalized circumstances may create or nourish dependency on the part of the recipient so that he may become *less* rather than *more* motivated to exercise individual initiative in future situations (2).

Industry has found that it can serve as a partner with government to the mutual profit of both. The space program—an endeavor that probably could not be handled alone by either—gives brilliant evidence of the effectiveness of such joint endeavors. The profession may need to explore ways in which the financial backing and the organizational assets of government can be coupled with the initiative and flexibility of private practice. Very likely, maximum utilization of auxiliaries assigned new clinical functions, may only be practical in an installation staffed by several dentists. A new form of group practice preserving professional independence, but utilizing governmental fiscal aid and coordinated with the services of salaried community workers, might offer the most effective and efficient pattern to serve the inner-city slum. Such a clinic might house the full-time practices of some dentists and the part-time practices of others who desire to establish and maintain practices in other, perhaps more desirable, areas of the city.

The third, and equally vital, leadership role for the profession is to exert a vigorous influence to upgrade official health agencies and help gain the resources they need to play an effective role.

*Dental Service Corporations:* The professionally sponsored service corporations probably are the most flexible administrative and legal mechanisms available for the development of new methods of delivering health services. In most states these non-profit corporations are in a position to accept money from almost any source and use it to fund almost any type of dental care plan. The radically new type of group practice, referred to previously, could probably be organized and financed quite easily under dental service corporation sponsorship. The corporation could use government grants, money

from community philanthropic groups, and patient payments to pay salaries for employed dentists or finance part of cost-sharing agreements with private practices utilizing the common facilities.

If the dental service plans are to fulfill their potential, however, leaders in the profession must recognize that the corporations should provide aggressive leadership in experimenting with new approaches to the group purchase of care. The officers and employees cannot be content to sit idly by merely waiting for someone to request the development of a program.

*Health Agencies:* In this transition period, the official health agencies appear to be losing the position of leadership they should occupy. While new funds for health care are being channeled to the Office of Economic Opportunity programs, community action groups, medical centers, and public schools, the dental programs of state and local departments continue to receive niggardly support. Salaries have not kept pace with rises in salaries of dental schools and other agencies, making it difficult to attract or retain qualified public health dentists. While state dental divisions struggle to survive, major dental care plans are initiated under the guidance of elementary school teachers, nurses, and housewives.

Dental personnel in health agencies need to move out with vigor and courage to lead in the planning and administration of realistic and effective health care plans. To do so, however, will require that they receive more insistent support from the profession at the state and local level. Such support will not be forthcoming, however, as the result of deference to the most conservative elements of dentistry. The public health dentist is obligated to challenge the practitioners in his area with the significance of current developments in health care and the necessity for professional leadership.

*Other Agencies:* It seems clear that, at least for the immediate future, fragmented planning for dental health services may be anticipated. In any one community, one may expect to see health department dental clinics, prepaid dental insurance plans utilizing private dental offices, dental care plans operated by school systems utilizing either offices or clinics, and a variety of OEO plans.

Hopefully, the pilot projects to be organized as the initial stage of the ADA Dental Health Program for Children will demonstrate a mechanism for a single unified oral health plan to cover all individuals in an area—regardless of the original source of funds.

In the meantime, non-health-oriented agencies should recognize the necessity for long-range planning by individuals with competence in dental public health and dental care administration. School systems and OEO community action groups have often been guilty of requesting funds for programs which included the provision of dental care without consulting with appropriate dental authorities. This *should not be tolerated* by the dental profession. Concern for the poor and unfortunate does not absolve an individual or an agency from the responsibility for prudence, intelligent planning, and respect for the judgment of those who are professionals in the field.

#### SUMMARY

Shifts in public attitudes toward the underprivileged and toward the availability of health care have resulted in radical changes in the organization of public dental care programs. The new agencies that have entered the health care field, and the restructured programs of agencies previously involved, will apparently be offering comprehensive dental care to almost all needy persons within a few years. This marked expansion of dental demand, and the potential changes in methods of delivering care that may result, will challenge the ability of the profession to adapt to new demands from society. If the response is intelligent and ingenious, a strengthened profession should be meeting the needs of the majority of the population—not just a fragment.

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# Communications Technology: Its Utilization in Improving the Delivery of Dental Health Services

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MY purpose today is to describe briefly selected elements of technology which may soon provide the means for remote access to digital and graphic information through interconnecting communications networks. The prospect of such an information network is intriguing because it has the potential to transform a library from its traditional role as a passive receiver of information to an expanded role as an active transmitter or distributor of information. The ability to broadcast information to those who need it, when they need it, is likely to turn libraries and information centers into communication centers of a sort. My remarks are designed to acquaint you in general terms with the new technology so that during the working group discussions which follow, we will have a common technical framework on which to build discussion relating to improved information systems in the field of dental health.

The marriage of computers to electronic communications can provide powerful information advantages. Since 1940, computer technology has progressed rapidly through three generations. The earliest computers were able to perform mathematical operations in a fraction of a second—a speed several orders of magnitude greater than manual processing. A second generation of transistorized computers became available in the late 1950s. Most of the machines we see around us today are results of this metamorphosis. They are faster, cooler, more accurate, and possess versatility and capacity superior to those of their antecedents. Furthermore, these machines no longer merely compute; they are capable of manipulating with equal skill letters of the alphabet, words, and sentences.

The computer industry recently announced a third generation of

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computer hardware. Besides offering more computer power for the dollar, the new equipment has several important capabilities. Its memory is large and can operate in speeds measured in billionths of a second. However, its principal advantage rests with its ability to connect with other computers and other electronic machines over standard communication lines. With emerging high-capacity, direct-access storage devices such as the Data Cell recently announced by IBM, we can now think in terms of storing large quantities of information at a central location, yet having the data available to numerous users at distant locations. This is what is meant by being "on-line" with a central computer, and "time-sharing" its use. Project MAC at Massachusetts Institute of Technology is one example of a time-sharing network, and General Electric's DATANET, 30 commercial computer subscription service, is another.

Communications technology can extend the resources of a library and information center beyond its physical borders. During the past few years, a wide variety of new communications equipment and techniques have been introduced, and their impact on data transfer methodology is increasing rapidly. The *same* communication channel can be used to send printed and graphic materials directly to homes, offices, or libraries. The major communications common carriers, such as the Bell System and the Western Union Telegraph Company, are currently upgrading their facilities in order to provide these new services. Standard telephone line facilities, for example, although originally designed for voice communications, are already being used for transferring the digital language of computers from one point to another. As microwave links and satellites are added to common carrier facilities, they will gradually replace the coaxial cables now used for the transmission of video information. The American Telephone and Telegraph Company predicts that by 1970 more than half of the traffic transmitted over its lines will be in the form of digital data rather than voice communications. The ability of libraries and information centers to engage in two-way multimedia communication with sister institutions and with individual users is extremely significant. This new potential can easily reshape the library's role and place in society.

The idea of remote direct access to central stores of digital information is not new. Computerized airline reservation systems, for example, have been in operation for many years. Eastern Airlines'

reservation network has telephone lines connecting more than 500 points east of the Mississippi to a UNIVAC 490 real-time computer in Charlotte, North Carolina. Basic data concerning all Eastern flights is stored on a magnetic drum, called FASTRAND. A *Uniset* terminal, at each agent location, serves as an input device for entering the passenger's flight request. On command, the *Uniset* transmits the request to the computer by cable line. The computer looks up the flight, performs the required logical processing, and composes a suitable response by extracting selections of data from the FASTRAND drum and communicating them back to the reservation agent through the communications system. This feedback causes a green or red bulb to light on the *Uniset*, allowing the agent to give a corresponding yes or no answer to the prospective passenger.

Massachusetts Institute of Technology has led an experimental effort to place at a user's fingertips the terminal equipment needed to interrogate a large store of information, under the control of a computer program, while numerous others are using it simultaneously. Project MAC provides its users with much more than merely a binary response. For example, a user at a terminal in Ann Arbor can transmit his computer program and data to the central computer in Cambridge. The computer, in turn, interacts with the user, debugging his program when necessary, processing the data for him, and finally replying with the answer to the problem. All of this occurs while users at other terminals elsewhere in the country are similarly conversing with the computer for their respective purposes.

Although Project MAC was designed for processing numerical problems, Dr. M. M. Kessler of the MIT Library developed a working model of a non-numerical on-line retrieval system serving as many as 100 remote consoles at distant points throughout the country over ordinary telephone wire. Bibliographic information from the field of physics constitutes the data base. Interaction between man and machine is free to intermediates and employs an inquiry language which closely resembles English.

Demonstrations of remote retrieval by computer were also featured at the Library/USA exhibit produced by the American Library Association (ALA) for the U.S. Pavilion at the New York World's Fair, 1964-65. Any person anywhere with access to a teletype machine was able to interrogate ALA's electronic computer at the New York World's Fair for selected essays, bibliographies, translations, and

current periodical references by subject. The service was the same as if the requester were standing in the exhibit area in New York.

Thus far I have reviewed examples of remote access to digital information. Let us now turn our attention to the methods which can be used for gaining access to stores of audio information from a distance.

A typical dial access system is in operation today at the University of Wisconsin Medical School for the retrieval of medical tape recordings. Physicians on the staff of the Medical School record four-to-six minute commentaries on current information having to do with the management of various medical procedures and topics. Tapes include such topics as: "Surgery for Carotid Insufficiency" and "Etiology and Management of Chronic Polyneuropathies." A practicing physician in any state may telephone (Area Code 601/262-4515) at any time of the day or night and request that a particular tape be played. Although audio information represents a slow form of information exchange, technological advances have been made to compress speech without distorting its content. Direct access to stores of audio information offers an inexpensive and practical method for updating information frequently and distributing it over an established, reliable telephone network.

An example of a hybrid digital-audio system can be found at the Carson Pirie Scott Company in Chicago. This department store issues dial cards to its customers for credit sales. The telephone number of the company's computer and the purchaser's account number are punched into the dial card. By depressing the dial card into a touch-tone telephone, any sales person can automatically communicate with the central computer and cause it to examine the purchaser's credit history. The same touch-tone telephone can also be used by the sales person to enter the dollar amount of the purchase into the computer by merely depressing the push buttons as if they were keys on a cash register. Thus, the touch-tone telephone not only establishes contact with the computer, but also provides an on-line communications channel for further data input as needed. The old rotary dial was unable to do this without extensive buffering electronics. After the computer compares the dollar amount with the purchaser's credit record, it determines if any limits have been exceeded. Following this logical processing, the computer automatically composes a voice message for relay to the sales person. An audio

response unit connected to the computer contains a limited number of words and phrases which were pre-recorded. It thus becomes possible for the computer to logically sequence a set of phrases to constitute the intelligence of a full sentence. With a little imagination, combined digital and audio systems like the one just described can be conceived for use by libraries and information centers to satisfy a variety of information requirements.

To round out the story of direct access, a word should be said about the use of video techniques. Stores of printed and graphic information in libraries and information centers usually exist in one of two forms—either hard copy or film. In either case, remote video scanning can permit a user to inspect these materials selectively on a TV monitor from a distance. For example, the Mosler Safe Company recently announced its SELECTRIEVER equipment which provides automatic access to a single page from among millions on film sheets called microfiche. The system finds the desired fiche, brings it to a holding station, scans it with a TV camera, and transmits the intelligence to a remote TV monitor. Printed material in books and journals can be similarly scanned and transmitted by either video or facsimile equipment.

As an extension of the use of video for remote access to information, several companies are developing video discs that will record many thousands of individual video frames of information; a single frame of video information could be the equivalent of a page of text. Since discs can be addressed digitally, it becomes possible to rapidly locate a particular frame without scanning the entire file sequentially. Ultimately, we can expect to see information systems capable of broadcasting video frames incrementally as well as continuously to TV sets in homes and offices which can be uniquely addressed by the transmitter. This form of TV time-sharing could have a profound effect on the design of information distribution systems of the future, particularly if the utilization of standard TV broadcasting facilities proves feasible for this purpose.

In summary, advances in communications technology offer every profession a new opportunity to reconsider its traditional library and information processes and a chance to formulate information distribution systems in innovative ways. For example, it is not unreasonable to consider building a dental health information network capable of linking the dental schools and their associated libraries. I

suspect that the beneficial implications of the subsequent resource sharing of dental information would be great. However, achieving this objective implies a willingness on the part of many segments of the dental community to cooperate in a responsible manner and to contract for certain rights as network participants.

The design of a dental health information network capitalizing on today's communications technology is therefore a highly complex assignment. If the dental profession decides to tackle the job, I predict the toughest decisions will be those relating to *what* should be communicated over the network rather than *how* the technology will be used to support it. In the final analysis, it will be the user—the practicing dentist, the dental researcher, the dental educator—who will benefit from these technological developments. While there is no doubt that a communications network capable of integrating multimedia dental information can be extremely helpful to the total community of users, the real challenge is to create the right *framework of need* on which to build such a system.





# Reorientation of Personnel for Dental Health Services in the 1970s

WILLIAM E. BROWN, D.D.S., M.S.

DENTISTRY has adapted well to the changes of the 1960s. Can it do as well or even better during the 1970s? Since 1950 the profession has changed markedly, probably more during the past 17 years than during the entire period of its existence prior to that time. Advances in technology, especially new equipment, and in the ability to prevent oral disease are landmark improvements. More effective use of auxiliary persons, the development of prepaid programs, a more objective attitude toward governmental involvement in health, and a broadening of dental curriculums are major modifications which will produce long-range beneficial effects. The profession has every right to be proud of its achievements. Other health professions, in fact, could do well to follow dentistry's leadership.

With so many changes taking place during the 1960s, is it reasonable to expect significant changes during the 1970s, or will this be a period of leveling off in order to consolidate gains? Although people in almost all walks of life would be delighted with a decade of tranquility, even the most conservative would probably admit that this is not likely to be our fortune. The 1970s could well make the 1960s look like the calm before the storm. International affairs, space projects, civil rights, poverty programs, inflation, and upheavals in education are among the problems that appear today like icebergs with only a small fraction of their impacts showing. Dentistry will likely be involved in all of these problem areas.

Although dentistry has altered its course in recent years, it has not done so without some associated pain and false starts. The health professions are by their nature politically and socially conservative and do not take to change quickly or joyously. They do, however, listen to the facts and to predictions and then, tempered by history, make plans for the future. Professional leaders may get impatient, but significant changes will occur only when rank and file practi-

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tioners are in agreement that proposals are worthwhile and will not diminish the stature of the profession. Thus, if the profession is to prepare for the 1970s it must predict wisely and plan carefully and then develop mechanisms to ensure cooperation by the highest possible percentage of its membership.

#### ATTITUDES OF THE DENTIST AND HIS AUXILIARIES

Attitudes are difficult to evaluate, but they should be examined, insofar as possible, because they have a strong bearing on the path the profession will follow.

Studies were conducted during 1965 and 1966 at The University of Michigan in connection with its Dental Assistant Utilization Program to explore attitudes of practitioners toward aspects of their practices, especially those aspects concerning their use of auxiliaries. The instrument used in the studies was the Strong Vocational Interest Blank (SVIB) that examines likes and dislikes of persons in various occupations and predict satisfaction and success in a field.

Dentists in the samples (University of Michigan classes of 1955, 1959, and 1965) had the following characteristics:

1. More often than men in general, they prefer working with things rather than people. Clergyman, consul, school teacher, social worker, YMCA worker, employment manager, and labor arbitrator are occupations they dislike most frequently.

2. They dislike conflict with other people more than men in general. Arguing, adjusting difficulties of others, expressing judgments publicly regardless of criticism, and being pitted against another are activities they tend to dislike.

3. They more often describe themselves as preferring to do a job themselves rather than delegating it to another and as rebelling inwardly at orders from another, obeying when necessary.

4. They dislike supervisory and managerial activities and, more than men in general, dislike the following occupations: employment manager, building contractor, factory manager, and governor of a state.

5. They demonstrate rejection patterns in the business contact area and low scores in the business detail group. More than men in general, they dislike mathematical, clerical, and business activities.

The studies indicated, further, that dentists like manual activities and occupations more than men in general and would like to be the

following: inventor, jeweler, machinist, photoengraver, watchmaker, mechanical draftsman, shopworker, repairer of electrical wiring, cabinetmaker, and machine operator. Moreover, they like scientific occupations and activities. Examples of these likes are the occupations of chemist, inventor, laboratory technician, pharmacist, and the study of botany, chemistry, geology, physics, physiology, and zoology.

Dentists like the arts more than men in general. They like the following occupations: artist, architect, interior decorator, musician, and sculptor. They dislike, more than men in general, verbal or literary activities including the following occupations and activities: poet, magazine writer, writing letters, writing reports, and editing.

On the basis of the SVIB studies, increasing the use of auxiliaries should provide both pleasure and discomfort to the practitioner. He should be pleased to assign business and clerical activities to auxiliaries since these activities are not interesting to him. But the additional supervisory demands might counterbalance the benefits of delegating such tasks. He would, however, be less probable to delegate technical tasks since he enjoys doing these things. The shortage of trained assistants, the relative preference of dentists for non-professional technical activities, and their relative lack of interest in teaching and supervision would be expected to act against the utilization of the chairside assistant to the limits of the law. The studies infer that making available, through training programs, assistants who are capable of executing chairside tasks would increase the delegation of responsibilities.

Attitudes of the practitioner and the dental educator toward the assignment of additional responsibilities to auxiliaries differ significantly according to an Analysis of Opinion Survey on Educational Standards in Dental Assisting conducted by the Council on Dental Education of the American Dental Association during 1967. The survey included 102 practicing dentists and 232 dental educators. When they were asked whether such functions as taking impressions for study models, placing a rubber dam, removing sutures, and carving and polishing amalgam restorations could be assigned to a dental assistant, a significantly higher percentage of educators than practitioners answered yes in each instance. Attitudes of practitioners differ from those of educators on a variety of issues and occasionally to the degree that suspicion is created. Although there may be a

substantive basis for these differences on some matters, generally when all of the facts are in and understood the controversies disappear. Varying ideas, however, represent a healthy organization, and dissent fosters better planning and more thorough justification for modernization.

Little is known about the attitudes of the auxiliaries, and speculation should not be taken too seriously. Yet, their attitudes should be considered because it is reasonable to consult each member of the professional family before developing policies which will affect all. It is obvious that laboratory technicians, at least at official levels, are not happy with the dental profession and are striving vigorously for licensure and other means of recognition. Dental assistants, few of whom have been educated formally, are eager to upgrade their status. Educational programs for assistants are developing rapidly. This is the most rapidly developing auxiliary by a wide margin, and it will be pleased to accept greater responsibilities.

#### WHAT WILL THE 1970s BRING?

*Expanding Services.* All signs point toward a marked increase in the number of patients seeking dental care. This increase will include a higher proportion of special patients, i.e., the young, the aged, the chronically-ill, the physically and mentally handicapped, the institutionalized patient, and the underprivileged. In recent years, the dental schools have done a good job in educating students to care for child patients. Few dentists, however, including recent graduates, have adequate knowledge to manage the other special patients optimally. This will be one of the major needs of the 1970s.

Understanding the underprivileged sufficiently to provide anything more than token care may well be one of dentistry's greatest challenges. In spite of the unhappiness over crash programs which often fall flat, in spite of a white backlash, and in spite of a congressional pull-back in spending, a carefully-planned, all-out attack on poverty is crucial if the riots of 1967 do not become the internal wars of the 1970s. Most dental patients now come from the upper- and middle-class strata of society. If dentistry is to do what it says it can do, provide quality care for all segments of society, it must begin to understand the underprivileged and their attitudes toward health care. This is a far more complex problem than most believe and will require intensive effort on the part of the profession.

If the profession is to develop the wherewithal to manage effectively the oral health needs of the aged, the chronically-ill, and the handicapped, significant curricular revisions are necessary along with the greater involvement of dentistry in hospitals. Dentistry must demonstrate to the other health professions that it really can contribute to total health and that it should participate in the care of the sick.

*Prepaid Programs.* Prepaid dental health programs should expand markedly in the 1970s, with the major impetus coming from new labor contracts and governmental programs. There is still some reluctance on the part of dentists to become involved in this method of remuneration because of the addition of a third party. Yet dentistry took a lesson from medicine and developed programs that avoid many of the early problems of Blue Cross-Blue Shield so that service corporations are operating on a sound basis with a minimum of inconvenience to the dentist. With few exceptions, both dentists and patients who have participated in programs administered by the Michigan Dental Service Corporation have been enthusiastically supportive. One wonders, in fact, just what woes the profession might be suffering had the service corporation concept not developed.

*Practice Patterns.* Practice styles will change in a variety of ways during the 1970s. More effective use of auxiliaries will be but one of the changes. Greater emphasis surely must be placed on complete diagnosis and treatment planning, and the unit concept of treatment must be eliminated. Prevention must become the theme of the profession. The 1950s and the 1960s have added many preventive tools that are by no means employed to the maximum. With the focus of research on the prevention of dental caries and periodontal disease, the profession's abilities to care for more patients more easily during the 1970s will be enhanced markedly. One need only use the tools that he has. Too many professionals still hold to the concept that unless they are treating disease they are not real doctors. The public will demand an alteration in this philosophy if the profession does not initiate the change first.

The prognosticators of 15 years ago predicted that group practice would soon become the mode. Even now, however, the trend toward group practice is not obvious. The need and the advantages are apparent; yet the strides toward this style of practice are halting. The inherent independence of the dentist may be at the heart of the re-



luctance. This independence, however, becomes a minor factor compared to the intellectual stimulation which is part of a group practice in which several dentists can share problems and their solutions and where the whole operation is one big course in continuing education. Quality control is a built-in feature. Hopefully, the trend toward group practice will speed-up markedly during the 1970s.

*Concerns for the Community.* One of the major educational changes of the 1960s has been the inclusion of a program in the dental curriculum concerned with community needs and related professional responsibilities. Departments of community or social dentistry have been established in many schools to develop broader views and greater understanding of all types of communities and all kinds of people in order that the young dentist will become competent to serve beyond the walls of his office. The 1970s surely will reflect this educational change through the increased involvement of the dentist in the affairs of his community and the world beyond.

#### CONTINUING EDUCATION: CAN IT MEET THE NEEDS OF THE 1970s?

Knowledge in the health sciences is increasing so rapidly one cannot predict the rate with any accuracy, although a conservative estimate would indicate that the amount of knowledge is doubling every 10 years. It is estimated that about 12 to 15 per cent of the practicing dentists in the United States take one or more refresher courses each year, and that year after year it is roughly the same group which participates. There is no way to measure the number who attend professional meetings and to estimate the number who read professional journals, and even were this possible this information would be meaningless in terms of improved patient care. There can be no question that continuing education should be a way of life for the health professional. There can be no question that the profession is not doing enough to meet this responsibility. There can be no question that every possible avenue should be explored to bring more continuing education to more dentists more frequently and that traditional methods of delivering this service are not good enough.

*Whose Responsibility?* Who should determine professional competence? Who should develop programs of continuing education and present them to the profession? To both questions the answer should be the profession itself, and indeed this is the official policy of the

American Dental Association. The dentists of the State of New York, however, have had this prerogative lifted from their jurisdiction, and this should concern dentists everywhere. The New York State Department of Health has developed a set of qualifications for dentists who participate in the Medical Assistance Program (Medicaid). These qualifications state, in part, that a qualified general practitioner is one who:

a) is a member of the active or attending staff at a hospital holding a valid operating certificate from the New York State Department of Health, or

b) is a member in good standing of the Academy of General Dentistry, or

c) has given satisfactory evidence of completion of a total of 75 hours of continuing education over a three-year period based on standards approved by the State Commissioner of Health. At least 25 of the 75 hours required shall be in attendance at formal courses, while the remaining 50 hours shall be satisfied by allowing credit on an hour for hour basis for attendance at specified scientific meetings.

This is the first time that an outside agency in this country has determined, unilaterally, professional qualifications.

Principles and practices of continuing education should not be instituted because of outside pressures. The profession must accept this responsibility because it is the right thing to do. There should be no restrictions, within the profession, as to who programs and produces short courses as long as learning is the primary motivation. Schools of dentistry should accept major responsibility, however, because of their personnel with all kinds of abilities and resources and because of their facilities. Schools for auxiliaries not associated with dental schools, in due course will have to get involved. And dental organizations, at all levels, should participate to the extent of their abilities. Hospitals with dental departments can make significant contributions as can state departments of health.

*Should Continuing Education Be Mandatory?* The concerned dentist can argue both sides of this question with equal vigor. To support the voluntary system one might state that forced learning tends to defeat the purpose of education at the professional level and could result in antagonism which might be difficult to overcome. Moreover, if enough methods can be developed to make continuing education readily available to all dentists, compulsion may not be

necessary. Many avenues of delivery have yet to be explored, and the dentist who is conscientious about continuing his education is particularly sensitive about being compelled to do what is already part of his way of life.

On the other hand, if service to the public is the primary concern of the profession then every dentist should keep his knowledge current, or he may become a liability. Compulsion may be a small price to pay for improved service. Educators, moreover, would be quick to point out that compulsory education at the elementary and high school levels has hardly been a detriment to any nation's progress. Compulsory continuing education would likely improve the abilities of the profession.

*Making Continuing Education More Available.* Formalized short courses have become traditional portions of the educational programs of most dental schools. A dental school has many educational resources under one roof and provides the clinical facilities for the student to practice what he has learned in lecture. When a school is located on a main university campus, it is a simple matter to secure lecturers from other units and to send students to other campus facilities. A university campus provides a learning environment that many dentists enjoy. The academic setting provides a pleasant break in routine and recharges one's interest. It does require considerable effort and time away from practice, but for the motivated dentist the dental school provides the best opportunity.

Educational centers remote from a dental school, if properly staffed, can provide instruction close to home and reduce the amount of time away from the office. Facilities in hospitals, public clinics, or mobile trailers could be used to practice clinical skills. Instruction in the use of auxiliaries could be provided by teaching teams in these kinds of settings most effectively. Programs in remote centers are often organized and operated cooperatively by dental schools, dental associations, and departments of health. Teaching by machine or by other programmed devices which call for responses from the learner will likely add another dimension to the remote educational center. New, intriguing devices and methods are exciting and stimulating and can attract new students.

Continuing education via television has great potential for the profession. It can take the classroom to any location, and it can be scheduled at such times that it does not conflict with office time. It

almost eliminates excuses for not participating. Closed-circuit educational television is used as a teaching aid in many dental schools and is also used in the meetings of some larger dental societies. The instant replay system is being used to show students how they performed. This appears to have exciting possibilities for instant learning. Networks of television cables throughout a state, joining colleges or hospitals in a closed-circuit system, can provide readily available centers for viewing. Video tapes, moreover, can be converted to movie films and made available for dental society meetings.

Open-circuit television has been used recently in New England for continuing education in medicine. This method has the advantage of bringing education into the professional's living room. Some have been concerned about the public viewing such programs, but no tangible disadvantages have been demonstrated. Programs scheduled during regular viewing hours must be prepared carefully to avoid misunderstandings. Open-circuit educational television has been used in other areas and has been transmitted at odd hours during which the public does not usually watch television. The professional, however, may not be eager to watch at these times either. Although television has many advantages, the student, with a few exceptions, does not have an opportunity to participate actively. Follow-up sessions using clinical facilities would provide the student an opportunity to practice those skills that he has viewed.

State and local dental society meetings traditionally provide the greatest opportunities for continuing education for the largest number. They usually combine scientific sessions with social events. Although some progressive societies work regularly to develop new formats, most local societies conventionally have a monthly dinner followed by a lecture. Attendance can be increased dramatically by including the cost of the meals in the annual dues. This type of program is less than stimulating because it comes at the end of the day when one's ability to learn competes with one's desire to get home. All-day meetings, half-day meetings, weekend meetings, and shorter meetings prior to the dinner hour are more effective in promoting learning. State meetings can provide a good learning environment if organized properly. They generally cover several days, and speakers can be given adequate time to cover their subjects in depth. The eager student has become more sophisticated and wants to learn more of the whys, than simply the hows. The program should not

automatically turn away from the speaker whose material is basic-science or research oriented, especially if it can be applied to the clinical sciences.

Although the concept of continuing education is many centuries old, it has received serious attention from the health professions only within the last 30 years and more precisely since World War II. The pre-war graduate had little opportunity to acquire the spirit of continual learning as an undergraduate student. He was pleased to graduate and then to forget about formal education. Most schools now endeavor to imbue their students with the philosophy that the professional is a continual student by definition and must accept this obligation as seriously as any other ethical responsibility. In fact, the failure to keep current should be considered a serious violation of the standards of ethics if the profession really means what it says.

*Continuing Education for Auxiliaries.* It is crucial for the public's health and the profession's ability to provide optimal service that dentistry's three auxiliaries have ample opportunities for continuing education. This is especially true today when more effective teamwork is essential. The need will be even greater in the years ahead as the auxiliaries are assigned more responsibilities. Better performances, greater loyalties, and longer tours of duty will be the results. For the woman who has served as a hygienist or an assistant and abdicated to raise a family, continuing education can provide the incentive to cause her return. Although the dental profession should take the lead in providing continuing education for auxiliary persons, paternalism can go only so far. If auxiliary organizations will make continuing education a rallying point for their very existence, then they will gain much strength and respect.

*Measuring the Effects of Continuing Education.* If continuing education is to mean anything it must result in better performance. Mere participation in a course does not ensure improvement. Credit for hours spent does not really measure learning although it perhaps provides incentive. Formal periodic testing of ability is aversive to the professional and probably is not too meaningful. Evaluation of one's abilities is built into group practice and hospital affiliations and to a lesser degree is included in prepaid programs with a mechanism for professional review. It's about time that the professional loses his sensitivity over the evaluation of his own performance. The compe-



tent dentist should be proud to display his capabilities. The less competent should be helped.

#### SUMMARY

Our profession faces many challenges in the 1970s, many of which probably are unthinkable in 1967. Dentistry has strengthened its foundation and is adjusting to the changing world. It is not moved by whim nor does it remain static because of tradition. It has not, however, taken full advantage of its continuing educational potential. Traditional methods of bringing knowledge to the practitioner should not be abandoned. Certainly the schools of dentistry should serve as centers for this purpose. Yet, every possible additional avenue of delivery should be explored, with emphasis being placed on bringing knowledge directly to the home base of the dentist. Even as formal basic educational programs are just beginning for many auxiliaries, continuing educational programs should be instituted promptly by these responsible institutions. Dentistry can only do part of the job. Continuing education is crucial to the advancement of the profession and to systematic improvement of the public's health. The concept of extending one's education throughout life should begin at least as early as the student begins the first day of his undergraduate program and should continue until death or retirement. There can be no other way.

## *Editorial Note*

# The Workshop Recommendations

*The Study Group Reports that immediately follow present 62 recommendations. These resulted from the discussion and action in each Group as noted and prepared by the Chairman and Recorder of the Group. The recommendations were presented to the Workshop participants at the concluding general session for consideration, discussion, and action.*

*Changes in wording, additions and deletions of words and phrases, approved by the participants at the concluding general assembly and recorded by the stenotypist, have been incorporated in the recommendations as they appear in the Reports. Where a substitute recommendation was made, the original is presented and a note follows with the recommendation as finally approved.*

*All of the recommendations will be considered by the Committee on Social Characteristics (the Planning Committee) of the American College of Dentists. The duplication and overlapping that occurs will be reduced by combining the recommendations involved. Recommendations with the same intent, scope, and suggested action, also will be combined.*

*Then this list of recommendations will be presented to the Board of Regents of the American College of Dentists for approval. The Board of Regents will designate those organizations, agencies, and institutions to whom each recommendation will be directed.*

*The recommendations submitted to the Board of Regents, and the actions taken by the Board, will be published in the July JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS. A reprint of this additional material will be sent to those receiving these Proceedings.*

*T. F. McBRIDE, Editor and Assistant Secretary of the American College of Dentists, and Project Director of the Dental Manpower Workshop on "Meeting Dental Needs in the 1970s."*

# The Need, Demand, and Availability of Dental Health Services

## REPORT OF STUDY GROUP I

This Report is intended to provide a reasonable estimate of the dimensions of the task which has been presented to United States dentists by the current federal health legislation and the American Dental Association's Dental Health Program for Children. The Group kept in mind the goal of "quality services" which include diagnosis, prevention, education, and treatment.

The Planning Committee assigned the Group certain questions for discussion and statistical projection. In the time available and with the resource material to which we had access, some answers were prepared and some projections made.

*To what degree will the demand for dental services increase between now and the decade of the 1970s?*

Population growth will account for an increase in dental demand of about 15 per cent during the ten year period ending in 1975, and 25 per cent by 1980. A 15 per cent increase in number of dentists is expected for the ten year period ending in 1975. Projections to 1980 have not been made.

Studies show that the demand for dental care is highly correlated with both income and education. However, since a high correlation exists between income and education, for practical purposes education may be ignored in predicting growth in dental demand. The predicted increase in family income is expected to cause a 23 per cent rise in demand during the decade ending in 1975, and 35 per cent by 1980.

Considering the various incipient dental programs, in addition to population increases and income improvement, it is estimated that the amount of dental care to be provided in 1975 will be 50-75 per cent higher than in 1965; and in 1980 it will be 75-100 per cent higher than in 1965.

The increase in number of dentists will take care of only 15 percentage points of the anticipated 50-75 per cent increase in demand by 1975. The increase in number of dentists to 1980 will take care

of perhaps 25 percentage points of the 75-100 per cent increase in demand by 1980. The percentage difference between the increased demand and the increase in number of dentists will have to be met by increased productivity per dentist.

*What factors are likely to affect need and demand for dental services in the 1970s, and what are the deterrents to meeting the need and demand?*

A. Factors affecting the need for dental services.

1. To reduce the need:
  - a. Universal fluoridation
  - b. More preventive services by dentists and auxiliaries
  - c. Dietary control
  - d. A research breakthrough, e.g. new methods of prevention, particularly knowledge of factors which will reduce caries development after the benefits of fluoridation have been gained.
2. To increase the need:
  - a. A change in the categories of treatment caused by the changes in practice resulting from fluoridation, e.g.
    - (1) Orthodontic needs are now being met in top income groups only
    - (2) Periodontal diseases are currently neglected in many practices
    - (3) Fluoridation reduces edentulousness in the aged; hence, with more persons retaining their teeth, this group will require more dental supervision for a longer period and also may require more periodontal services
    - (4) The life span is increasing and will add to the proportion of aged persons in the population.

B. Factors affecting demand for services.

1. To reduce demand:
  - a. Fluoridation
  - b. Lack of dentists and dental service
  - c. High costs of dental care
  - d. Unpleasantness of dental treatment
  - e. Effective health education of the public to more favorable dietary habits.
2. To increase demand:
  - a. Population growth
  - b. Changing character of the population
    - (1) Larger number of aged population and larger number under age 25
    - (2) Improved educational levels
    - (3) Growing affluence of society
    - (4) Changes in attitudes concerning dentistry as a wanted service, e.g. development of industrial and foundation dental health programs; acceptance of dental treatment as a status symbol.

## c. Professional advancements

- (1) High speed equipment
- (2) Improved technics in anesthesia and analgesia
- (3) Sponsorship of prepayment programs and health legislative measures at all levels, e.g. public financing of care for indigents and near-indigents.

## C. Deterrents to meeting both need and demand.

1. Negative attitude of the dental profession and its leaders:
  - a. Persons who enter dentistry are not likely to be socially oriented.
2. Lack of continuing education programs for self-improvement; inadequate motivation by educational and other agencies for participation in continuing education.
3. Apathy of individual dentists toward assuming complete professional responsibility for services.
4. Apathy of other professional groups toward dental problems.
5. Shortages of both dentists and auxiliaries, plus their poor distribution.
6. Shortage of training facilities and teachers.
7. Unfavorable ratio of specialists to general practitioners in many areas, and complete lack of specialists in others.
8. High costs of organizing for dental care, e.g. start-up costs for equipping a dental office.
9. Lack of funding for dental care programs for indigents, near-indigents, and other special groups.
10. Transportation problems encountered in bringing patient and supplier together.
11. Administrative problems and blocks:
  - a. Lack of fiscal intermediaries such as dental service corporations
  - b. Inexperienced supporting people at the local level
  - c. Professional opposition to closed panels
  - d. Lack of professional interest in and acceptance of the group practice concept.

*What geographic variations can be expected to influence the availability of dental services? How can the distribution of manpower be improved—in rural communities? in poverty areas? for the chronically ill and disabled? for the elderly?*

Geographic variations exist that can be expected to influence the availability of dental services. Under ordinary circumstances services are available where the people are concentrated and where the economy functions at a high level. There is an uneven distribution of dentists between urban and rural communities and states.

Economically depressed areas, such as those in Appalachia, do not attract dentists under the ordinary fee-for-service system of providing care. On the other hand, resort areas where affluent people gather usually are well supplied with dentists.



- A. Suggestions to improve dental manpower distribution in rural communities:
  - 1. Scholarship programs for dental students residing in rural areas
  - 2. Forgiveness features of federal loan programs for locating in shortage areas
  - 3. Subsidization programs by communities, private industry, and foundations to attract dentists to shortage areas
  - 4. Tax forgiveness, provision of facilities, or other attractive concessions offered by local communities
  - 5. Provision of general practice internships and residencies under sponsorship of state health agencies or educational institutions
  - 6. Provision of mobile units by officials organizations for use by private practitioners
  - 7. Group practice arrangements by private dentists, including the part time services of specialists.
- B. Suggestions to improve dental manpower distribution in poverty areas:
  - 1. Establishment of fixed clinics in urban neighborhoods and fixed or mobile units in rural areas
  - 2. Assurance of adequate income for the private dentist to attract him to shortage areas
  - 3. Establishment of dental services programs through assignment as employees of educational or governmental agencies, e.g. internship and residency programs, or through the U.S. Public Health Service as a draft-exempt activity.
- C. Suggestions to improve dental manpower distribution for the chronically ill, disabled, and the elderly:
  - 1. Development of transportation systems to bring patients to dental facilities
  - 2. Development of programs for dentists to visit non-ambulatory patients
  - 3. Development of more complete dental facilities in certain hospitals for specialized treatment
  - 4. Expanded use of auxiliary personnel for educational and home care programs.

*How do specialty practices and residency programs relate to the need and availability of dental services? What will be the needs in the specialty areas in the 1970s? Should any new specialties be recognized; if so, which?*

The Group considered the eight specialties now recognized by the American Dental Association. These specialties and their relation to the total number of dentists in 1965, and in a five year projection through 1985, are detailed in Table 1. The Group thought that there are now and there will continue to be inadequate numbers of specialists. Factors influencing the supply of specialists negatively are: insufficient graduate educational programs, insufficient places in these programs, and too few specialists wishing to teach in them.

TABLE I  
DENTAL PERSONNEL RESOURCES

	1965	1970	1975	1980	1985
Total Dentists .....	109,300	114,575	122,915	135,245	148,660
Retired .....	14,050	14,465	15,150	16,125	17,125
Active .....	95,250	100,110	107,755	119,120	131,535
Generalists .....	88,760	90,635	92,270	96,760	102,245
Specialists .....	6,490	9,475	15,485	23,360	29,290
Endodontists .....	150	495	780	1,115	1,430
Oral Pathologists ....	50	75	145	280	310
Orthodontists .....	3,460	4,375	6,025	7,800	9,750
Pedodontists .....	490	960	2,160	3,500	4,770
Periodontists .....	380	890	2,160	3,590	5,160
Prosthodontists .....	325	595	1,375	2,340	3,275
Public Health Dentists	60	95	170	260	345
Oral Surgeons ....	1,575	1,990	2,670	3,525	4,250

(Estimates from the Division of Dental Health, U.S. Public Health Service, December 1, 1967.)

In addition, specialists are presently maldistributed and probably will continue to be into the 1970s.

It was recognized that the increased population and the changing character of the population would create even greater demands for specialists.

In the instance of orthodontics, it was thought that there was a considerably greater need than demand, but that the demand was increasing and that "demand begets demand." There should be more inducement held out to young men to practice pedodontics. Although the character of pedodontic practice is expected to change with more widespread fluoridation, the greater proportion of the population being under 18 should result in a greater demand for pedodontic services in the next few years. For periodontics, oral pathology, endodontics, and prosthodontics, it was believed that the absolute increase in the numbers of the elderly in the population, as well as the impact of fluoridation, would result in a greater demand for these services. In regard to public health dentists, it was concluded that the demand exceeded the supply, and that the need for administrators in new governmental programs would accentuate the problem. Oral surgeons already are in short supply and apparently will continue to be.

The grouping of a variety of specialists in a rural center (e.g. a county seat), even on a part time basis, might be one answer to supplying the need for specialists in rural areas.

The Group concluded that one answer to the specialty shortage was to increase the capabilities of generalists to cope with special problems in all clinical areas primarily through additions to undergraduate education. It was emphasized, of course, that concomitant with the assumption of expanded clinical functions the generalist must be taught his limitations.

It also was concluded, just as the duties of auxiliary personnel can be expanded in general practice so can their duties be expanded for the auxiliary personnel of specialists—but *only* under the supervision of the specialist himself, and following guidelines of state boards of dental examiners. One guideline should be that only "reversible" procedures should be delegated.

In regard to aid from specialty residents, it was thought that they may render adequate treatment, but such care being related to their education would be of minimal consequence in terms of meeting greater needs. It was pointed out further that there are more residencies available than there are dentists to fill them, and that probably many more residencies will be developed as a part of a trend to create more hospital dental departments and comprehensive health services.

It was concluded that no new specialties should be recognized by the American Dental Association but that subspecialties might be encompassed by existing specialty boards. Also, groups of specialists could work together as teams rather than develop new specialties which might cut across the various disciplines of existing specialties.

The question of early identification and preparation of specialists in their undergraduate years (such as "Curriculum II" at the University of California which was designed to train orthodontists) was raised but not resolved. Also considered but not resolved was the issue of requiring all specialists to have had some experience in general practice.

The Group endorsed the Report of Group B on "The Influence of Future Demands on Recognition of Specialists," as reported in *A Workshop of Dental Examiners and Dental Educators: Report of Workshop Groups*, Chicago, February 3-4, 1967.

*Will any qualitative changes in dental services be anticipated?*

Such changes will be brought about by the following factors:

- A. Changes in the dental profession.
  - 1. Education:
    - a. More reliable selection of students through the utilization of psychosocial criteria
    - b. Curricular changes in dental schools to gain better auxiliary utilization, increased social consciousness, and broader backgrounds in dental medicine
    - c. More acceptable postgraduate sequences; newer teaching techniques; increased opportunity in internship and residency programs.
  - 2. Quality control exerted by the influence of:
    - a. Hospital dentistry, especially for the chronically ill and aged
    - b. Stronger state boards of dental examiners
    - c. Increased numbers of dentists entering some type of group practice.
- B. Changes in the level of dental care.
  - 1. Increase in the number of auxiliary personnel and broader areas of responsibility for them:
    - a. Dentist's assumption of the role of "Diagnostician-Manager"
    - b. Technical responsibility and capability limited mainly by the state's laws and regulations
    - c. Development of new categories of paradental auxiliaries.
  - 2. Applied science from dental research:
    - a. Broader medical responsibility of the dentist, e.g., vaccination against caries; pharmacologic management of the patient
    - b. More efficient and effective care as a result of the utilization of scientifically sound data.
  - 3. Increased counseling to the public by the profession:
    - a. In caries control
    - b. In nutrition
    - c. By the use of audio-visual devices for patient education.
  - 4. Increased demand for quantity dental services.
- C. Outside influences on the dental profession.
  - 1. Control of quality by governmental agencies, unions, insurance carriers, and dental service corporations:
    - a. Periodic review of services rendered
    - b. Salaried dentists in varying arrangements, e.g. some closed panel programs as fostered by unions and industry.
  - 2. Innovations in dentist-community relations:
    - a. Private practice combined with contracted service to community health groups (arrangements within or outside the private office)
    - b. Support and counsel provided to salaried dentists in community health centers, hospital outpatient clinics, or other special dental care facilities.
  - 3. Public demand to be informed and educated.

In summary, the factors listed here encompass changes that will affect the quality of dental services in the 1970s; they are a part of

the continuing development of the profession that should improve the quality of services.

The increased demand for quantity dental services, however, may have a detrimental effect unless offset by more effective means of production, auxiliary education and utilization, and the increased use of preventive measures.

Outside influences can be beneficial to the delivery of quality dental services, if an atmosphere of mutual understanding exists between the profession and the outside groups.

*Describe the reasons why the emphasis placed on preventive dentistry should be increased.*

Three reasons for an increasing emphasis are:

1. Preventive dental services will reduce treatment needs during an era of increasing demand. Such services might be supplied by the judicious use of the auxiliary manpower becoming available. Some reasons for this reduction are:
  - a. Drastic reduction in the prevalence of oral diseases
  - b. Improvement of the effectiveness of current preventive technics or the development of new, more effective technics
  - c. Provision of procedures to gain an early diagnosis of pathological oral conditions in order to treat oral disease with maximum economy.
2. The time required for treatment, and hence its cost and requirement for manpower then could be reduced.
3. The contribution to oral health, through the utilization of preventive measures supplies a much more satisfactory and lasting biological result than the restoration of damaged units or the replacement of such units.

*What general directions should research in preventive dentistry follow?*

1. Efforts directed toward a more exact determination of the causes or oral factors associated in oral diseases so that more effective countermeasures can be developed.
2. Discovery of additional effective preventive technics that can be applied to large groups of the population in a simple, feasible, and economical pattern.
3. Development of evaluating technics to measure objectively the effectiveness of instruction in dental health practices.
4. Improvement of the laboratory technics and materials to be used in testing for oral diseases and for screening patients.
5. Further contribution to the improvement of radiographic equipment, technic for exposing, safety during exposure, type and size of films, and processing of exposed films to obtain a sharper and more definite product as an aid in diagnoses.



*How, and to what degree, will the institution of preventive measures affect the demand for and the nature of oral services in the 1970s?*

1. The manner for achieving the effect:
  - a. Intercepting pathological lesions while still in their incipient stage
  - b. Utilizing preventive measures as the choice whenever these measures are available
  - c. Prolonging the "life expectancy" of restorations and prostheses
  - d. Securing improved adaptation and fit in restorations and prostheses
  - e. Institution of measures for the reduction in the attack-rate of any oral disease
  - f. Timing the treatment of oral conditions to achieve the most favorable results
  - g. Utilizing all measures that have been demonstrated as important in maintaining the integrity of the remaining oral tissues during restorative procedures
  - h. Developing a facility for genetic counseling in an effort to control the prevalence of inherited orofacial and dental anomalies.
2. Extent of the effect gained through the institution of preventive measures on the demands for dental health services:  
(N.B. Objective documentation of the extent requires additional research and calculation.)
  - a. With 70 per cent of persons under maintenance care from as early a period in life as oral care can be instituted, oral cancer could be prevented or treated in its incipient stage for the entire group of recipients included
  - b. With as high as 70 per cent of persons motivated to participate in maintenance care throughout life, periodontal disease in the total population of participants could be prevented, save for that produced by temporary infections
  - c. The effects of life-long ingestion of appropriately fluoridated drinking water now can be listed:
    - (1) The progress of carious lesions is slowed, eliminated for anterior teeth, and limited for the proximal surfaces of posterior teeth
    - (2) The attack rate of new carious lesions is reduced by approximately 65 per cent in number, and the size of the lesions by a still greater percentage
    - (3) The Kingston-Newburgh study, reported in 1967,\* determined 59 per cent more chair-time was required for initial care in Kingston (nonfluoridated) than in Newburgh (fluoridated), and 70 per cent more chair-time for maintenance care
    - (4) The number of edentulous patients is reduced†

\* Ast, D. B. *et al.* Time and cost factors to provide regular periodic dental care for children in a fluoridated and nonfluoridated area. Progress report II. Am. J. Pub. Health 57:1635, Sept. 1967.

† The Group had access to graphic material compiled from: Russell, A. L. and E. Elvove. Domestic water and dental caries; VII. A study of fluoride-dental caries relationship in adult population. Pub. Health Rep. 66:1389, 1951; and Pelton, W. J. *et al.* Tooth morbidity experience of adults. JADA 49:439, Oct. 1954.

- (5) Dental supervision and treatment is required for longer periods on the natural teeth of elderly patients.
- d. The topical application of fluorides in nonfluoridated areas also will reduce the need for restorations
- e. Demands for emergency treatment will be reduced other than for accidents and certain infections
- f. The contribution of well-trained pedodontists and general practitioners through the institution of proper diagnoses and interceptive orthodontic treatment is difficult to assess today.\*

*If prevention is the result of an appreciation of all health and public education, who is to educate the dentist so that he practices preventive dentistry rather than conducting a salvage service?*

Education will have to be gained through the development of a philosophy of prevention and control by students throughout their undergraduate training. Such a philosophy will have to be instilled in practicing dentists also, through the efforts of continuing education in which dental societies, dental schools, and departments of health must engage cooperatively.

*To what extent is the profession socially and morally obligated to meet all the future need and demand for dental services?*

The ethical standards adopted by the profession, as well as the stated policies of the American Dental Association, require dentists to initiate and support sound dental programs for the benefit of all society. Dentists are socially and morally obligated to assume this responsibility.

*If the profession cannot meet the future need and demand for dental services, then who will?*

If the profession fails to satisfy the needs of the public in the future one can expect that the public will seek its own solutions. The most logical consequence of adverse public reaction has been demonstrated recently in the provinces of Western Canada, where practice acts were altered to permit lesser trained auxiliaries to deal directly with the public. Failure to find and propose reasonable and satisfactory solutions to meet the future dental requirements of the public will jeopardize the privileges currently enjoyed by dentists through state statutes.

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\* Weber, F. N. Actualizing the potential of preventive orthodontics. Workshop on Actualization of Preventive Dentistry. Washington, D.C. August 10-12, 1965. pp. 61-67. The Curators, Univ. of Missouri, Columbia. 1966.

## STATISTICAL PROJECTIONS

Study Group I made a number of assumptions in developing the following projections, primarily because sufficient data are not available on which to base truly accurate estimates.

Although the initial assignment referred to data on children 3 to 15 years of age, the Group decided that more realistic projections could be made using data for children 5 through 18 years of age. This decision should in no way reduce emphasis on the need to examine and treat preschool children, a group that does not now receive as much dental attention as it should. Estimates were limited to school-age children primarily because this group is "captive" in the sense that the school system could be used to encourage fuller utilization of dental services.

*What will be the best possible estimate in the 1970s of:*

- A. the number of children (5-18 years) to be provided with comprehensive quality dental services?*
- B. those receiving such care through government programs?*
- C. those receiving such care through private resources?*
- D. those receiving such care through organized third party systems?*

A. The number of children 5 through 18 years of age by 1975 is estimated by the U.S. Bureau of the Census to be 57,984,000.

B. The number of children *eligible* for dental care through governmental programs is estimated to be 16 per cent of the total number of children 5 through 18 years of age, or 9,280,000.

The assumption is made that of this number, only 65 per cent or 6,032,000 would actually receive *some* dental service in a given year. This assumption is based on experience with currently operating governmental dental care programs for indigent children, and on the premise that the ADA Dental Health Program for Children would provide additional stimulation to increased use of dental services.

Of the number receiving *some* dental service, only 40 per cent or 2,412,800 children would receive comprehensive quality dental service. This estimate is made on the assumption that "complete dental care" would be provided, except for orthodontic care. This exclusion is made because it is fully recognized that a sufficient number of orthodontists will not be available in 1975 to meet the demand for that service.

C. The number of children *eligible* for dental care through private resources is estimated to be 48,720,000, or all children not from indigent families.

The assumption is made that 80 per cent, or 38,976,000 children, actually would receive *some* dental service each year. Of this group, only 40 per cent, or 15,590,400 children, could be expected to receive comprehensive quality dental services (exclusive of orthodontic services).

D. The number of children *eligible* to receive dental care through organized third party systems would be the entire population of 58 million children 5 through 18 years of age.

However, only the indigent children (9,280,000) would likely be enrolled automatically. Only about 70 per cent, or 34,104,000 of the remaining 48,720,000 children could be expected to be covered under plans of unions, management, or private payment arrangements. Hence, about 76 per cent, or 43,384,000 of the 58 million children would actually be enrolled in third party payment systems.

Using the estimated utilization rates of 65 per cent for indigent and 80 per cent for the non-indigent, 33,315,000 children (6,032,000 indigent and 27,283,200 other children) would receive *some* dental care through organized third party systems.

Of these children, only 40 per cent, or 13,326,000 children would receive comprehensive quality dental services.

#### SUMMARY TABLE

NUMBER OF CHILDREN 5-18 YEARS OF AGE ESTIMATED TO BE PROVIDED DENTAL CARE IN 1975 (BASED ON AN ELIGIBILITY OF 58,000,000 CHILDREN), BY SOURCE OF CARE

Source of Care	No. Eligible	No. Receiving Some Care	No. Receiving Comprehensive Care
Governmental Programs . . . . .	9,280,000	6,032,000	2,412,800
Private Resources . . . . .	48,720,000	38,976,000	15,590,400
Total Governmental Programs and Private Resources . . . . .	58,000,000	45,008,000	18,003,200
Organized Third Party Systems . . . . .	58,000,000	33,315,000	13,326,000

*How may these four categories of recipients be motivated to participate in treatment programs?*

1. Alteration of the system of delivering services to make it easier and simpler to secure the services.
  - a. Bring the recipient and provider closer together, e.g.
    - (1) Location of the dental facility in the school where the recipients are enrolled
    - (2) Transportation of the recipients to the source of treatment
    - (3) Utilization of mobile dental units.
  - b. Facilitating the scheduling of recipients, e.g.
    - (1) Changing the hours of the dentists to evenings and Saturdays
    - (2) Cooperative system of excuses for recipients during school hours arranged between the state department of public instruction, school officials, and the dental society
    - (3) Identification of clinical facilities such as the dental clinics of the 165 Veterans Administration Hospitals that could be utilized when not in use by the hospital staff.
2. Educational activities.
  - a. Professional education:
    - (1) Dental personnel
      - (a) In governmental programs, orientation to the different socio-economic background of the recipients
      - (b) Orientation to the dental program itself and to the total program
      - (c) The recruitment and orientation of dental health aides from the culture of the recipients' group.
    - (2) Other health professionals (physicians, nurses, social workers, and educators) who will serve as sources of referral.
    - (3) School personnel, e.g. pre-orientation and in-service orientation of teachers and administrative persons.
  - b. Education of recipients and families:
    - (1) Development of educational kits
    - (2) Hygienists' visits to schools
    - (3) Development of a referral system
    - (4) Utilizing bite-wing radiographs to interest recipients in participation.
  - c. Education of public agencies personnel, e.g. by participation of dentists in agencies such as health councils.
3. Other factors.
  - a. Removal of the economic barrier per se to encourage participation
  - b. Motivation of children in more affluent circumstances:
    - (1) Encourage the family to participate in prepaid plans
    - (2) Make prepaid plans more attractive by encouraging the incorporation of incentives such as the reduction of the co-payment features as a reward for continuous participation
    - (3) For the participants in third party systems, encourage utilization since the benefits are earned fringe benefits to which the recipients are entitled
    - (4) Promote a tax advantage for the prepayment premiums.

*What will be the estimate in the 1970s of the number of dental hours required to provide comprehensive quality dental services for*



*each of the above four categories? What will be the number of hours for all four categories?*

The number of dental hours required to provide comprehensive dental services for children 5-18 years of age by 1975 in the aforementioned categories are:

1. For the total number of children eligible .....	75,400,000 hours
2. For children to be treated in governmental programs ..	3,136,640 hours
3. For children to be treated by private resources .....	20,267,520 hours
4. For children to be treated by organized third party systems .....	17,323,800 hours
5. Total (2 and 3) .....	23,404,160 hours

The above estimates are based on data collected by the American Dental Association for *The 1965 Survey of Dental Practice*. These data indicate that approximately 1.3 hours are required by the average dentist for each patient treated. The assumption is made that by 1975 the average dentist will be able to provide comprehensive quality dental service in the same length of time that it takes the dentist of today to provide routine dental services, i.e. 1.3 hours.

*For the program estimated above, what will be the number of dental hours needed for dentists, hygienists, and assistants?*

Under optimum circumstances, we can assume that a dentist would require a hygienist and four additional auxiliaries to provide comprehensive quality dental services. The time required for dentists would be 23,404,160 hours (item 5 in the listing immediately above), a similar amount for hygienists—23,404,160 hours—and an additional number of hours for the four auxiliaries of 93,616,640 ( $4 \times 23,404,160$ ). Thus a total of 140,424,960 man hours would be needed for an optimum program.

*For the same estimated program, what will be the number of dental hours needed with optimum qualified assistance from auxiliaries?*

The total number of hours needed for all auxiliaries would be 117,020,800, or the total of the time required for a hygienist and four other auxiliaries ( $23,404,160 + 93,616,640$ —see above).

*What expansion in dental manpower will be required in the 1970s if these programs were carried out?*

Assuming optimum utilization of hygienists and assistants, the number of dentists needed to provide comprehensive care for 18

million children aged 5-18 years, under both governmental programs and private resources, and based on a total of 23,404,160 hours required for care, would be 14,244 dentists. This estimate assumes that dentists will work approximately the same number of hours per year at the chair as they do now (1,643). It should also be understood that this number of dentists would represent the number which would be required if they devoted full time to the age groups being considered.

This Group has presented certain facts and figures. There are no recommendations.

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# Increasing the Productivity of Dental Personnel

## REPORT OF STUDY GROUP II

The questions submitted to the Group by the Planning Committee were discussed. These are presented with a summarized description following. This description is an attempt to interpret reasonably the Group intent, and to present different opinion where it was deemed important to the overall objective and charges. The recommendations then follow.

*How much has the productivity of dentists increased in the past ten years? How much increase can be expected in the next ten years?*

Using information available, the figure of 30 per cent was cited. For the 30 years preceding 1966, a 50 per cent increase in productivity was evidenced. Thus, 60 per cent of the 30 year increase occurred during the last third of the three decades. This trend will continue with geometric acceleration within the next ten years showing a 50-100 per cent increase in demand for dental service, based on 1966 productive levels.

Such figures are disconcerting and Group reaction to them did not show total agreement, based primarily on different projection technics. There was, however, general agreement that certain factors will substantially affect productivity in the next decade and that identification without category quantification should be listed. These factors are:

1. Demand for dental care
2. Increased use of auxiliaries
3. Available numbers of dentists in work force
4. Nature of service rendered
5. Education affecting technical and motivational behavior related to intra-professional groups, inter-professional groups, and the general public
6. Payment programs, both public and private
7. Technological advances in equipment and materials.

*What steps might be taken to increase the productivity of dental personnel now?*

The Group realized that this question asked for measures which might be implemented at the present time. Discussion ranged from practical approaches for today through optimum goals for the future. Agreement was strong in stating the need for increased productivity. The problem was considered multi-faceted and placed in the framework of two philosophies.

First, the need is becoming so acute that it seems to require a revolution of present attitude and patterns. Second, experience and understanding mitigate the likelihood of a true revolution, suggesting instead a more pragmatic evolutionary approach. Both philosophies are valuable and should in fact support each other if final objectives are clearly stated and progressively activated.

Some specific measures which can operate to increase productivity are:

1. Educate dentists in the most effective utilization of presently available auxiliaries. This includes the now available auxiliary work force of dental hygienist, chairside dental assistant, laboratory technician, office secretary-receptionist, and/or business manager. A separate person performing each of these work tasks allows significantly expanded productivity of the dentist.
2. Development of more group practices, defined as a group of dentists providing a full range of diagnostic and clinical services to the public on an open basis (to avoid confusion with closed panel programs).
3. Provide legal opportunity for expanded duties and functions of auxiliaries.
4. Encourage and support motivation of all dental personnel through continuing education programs in auxiliary utilization.
5. Stress need for strong continuing intra-office training programs in each dental office utilizing auxiliaries.
6. Retain presently employed auxiliaries and encourage the return of trained auxiliaries to the dental work force through adequate compensation, both monetary and psychological.
7. Experimentation in broadened functions of the dental auxiliary (e.g. placement of rubber dams, polishing of restorations). The proposal presented in Dr. Hammon's position paper that those functions which are repairable through correction or replacement without undue harm to the patient's health could serve as the outline for experimentation.
8. Continue studies of dental team behavioral patterns, as outlined in Dr. Brown's position paper, to allow better understanding and direction of skills and attitudes.
9. Support expanded dental educational programs of all types (undergraduate, graduate, and auxiliary) and develop new programs to increase work force.
10. Place major emphasis on preventive technics to reduce need.
11. Encourage attention to personal health concern of all members of the dental team to allow continued good health and productivity.

12. Encourage better distribution of dentists and dental hygienists through expanded reciprocity agreements, group practice incentives, and other methods.
13. Encourage expanded support of undergraduate Dental Auxiliary Utilization programs in dental schools at all clinical levels utilizing all types of auxiliaries at undergraduate, graduate, and staff levels.

*How can utilization of dental auxiliaries be expanded more rapidly and effectively? How may dentists be encouraged and trained to use auxiliaries more extensively?*

These questions received attention and answers under discussion of Question 2.

*How best can new productivity-increasing techniques, procedures, office and equipment design, etc. be transmitted to: (a) practitioners; (b) auxiliaries; (c) dental schools for introduction into clinical instruction; and (d) auxiliary schools for inclusion in training programs?*

It was thought that this question related directly to communications, and could best be answered by Group IV; only limited discussion was undertaken. This related primarily to unanimous agreement of the great need for information to be disseminated to involved personnel. A strong suggestion was made to include manufacturers' representatives as recipients of this material.

*What additional functions, responsibilities, and duties should be assigned to auxiliary personnel to increase dentist efficiency and productivity without reduction in quality?*

The Group discussed this question at great length and at separated intervals, each time with fervor. In summary, certain attitudes emerged clearly:

1. It was assumed that all discussions of increased or broadened functions of all dental team members provide for quality at and preferably above presently acceptable levels. Without this, any expansion is self-defeating.
2. There was strong agreement that proposed additional functions, responsibilities, and duties definitely should not be listed in serial fashion, but that laws be structured to allow designation of authority relative to changes in a responsible regulatory body of the dental profession, such as state boards of dental examiners. This body, active in accordance with regional needs and attitudes, should be encouraged strongly to implement experimentation and change in "areas of broadened duties and responsibilities which are reparable and do not cause undue harm to the patient."



*What should be the function of dental educators, dental examiners, and dental societies in determining additional functions, responsibilities, and duties of auxiliary personnel?*

A representation of dental educators including auxiliary educators, dental examiners, and dental societies should operate jointly to determine additional functions, responsibilities, and duties of auxiliary personnel with close liaison between representatives of auxiliary groups during deliberations.

*What steps should be taken to implement a program of expanded functions of auxiliaries within a state?*

The Group thought that this question was discussed in some detail in Question 5 and described therein. Additionally, the group shared the feeling that expanded functions should be studied first, under supervision and management by responsible dentists, perhaps in the setting of an educational institution, and in cooperative liaison with dentists and auxiliaries representing all areas of dental activity.

*Should licensure be required of auxiliaries who perform intraoral functions?*

The group could not discuss this question as stated. Because of the inclusion of "intra-oral" it was considered that the laboratory technician is not involved. The question, relating as it does to presently available auxiliaries, involves the hygienist and the assistant. Spirited discussion revealed a consensus that licensure should not be required of the dental assistant. Agreement could not be reached concerning the dental hygienist and licensure. The problems of responsibility, danger of "denturist" type activity, and exposure to major legal problems were cited. A proposal to obtain consensus to the statement "licensure or registration in connection with appropriate educational background should be required," failed.

A minority opinion relating to the original question was as follows: Licensure should be required of the dentist, leader of the dental team. Inherent in this request is the fact that the dentist should and must assume total responsibility for all oral health services performed under his professional purview by any or all auxiliary members of the dental team. With respect to the members of

the team, i.e. hygienist, assistant, and other aides, a requirement of certification and/or registration should be implemented.

*What can be done to convince both profession and public that auxiliary personnel can assume effectively additional functions, responsibilities, and duties?*

There was unanimous agreement that the problem of convincing the public is a relatively simple one, while the problem of convincing the profession is a major one and by far the most critical, since it is certain that unless all members of the profession, most notably dentists themselves, accept changes with enthusiasm, it will be extremely difficult to effectively implement change no matter how imperative the need. Apathy, fear of change as a threat to established "successful" patterns, and lack of awareness of need were factors cited relative to the profession's resistance. It was proposed that:

1. Editorials, supporting expanded functions, be directed to the profession through journals and other communications media.
2. Behavioral science studies to understand and motivate principles of behavior which institute acceptance be undertaken.

*What factors contribute to the shortage of hygienists, assistants, and laboratory technicians? What can be done to overcome these shortages?*

Factors contributing to the present shortage are multiple and complicated. The most critical factor has been inadequate resources for providing the education to develop a professionally well-trained cadre in all three areas, coupled with the recent greatly accelerated demand for all of their services. Other important factors relating to the shortage are:

1. Problems of recruitment, traditionally too late with too little attention to attract top quality candidates
2. A traditional restriction of applicants to females essentially by unwritten law and social attitude. It is suggested that the matter of sex, if challenged, would not be defensible as a restrictive factor
3. Retirement from the work force by females because of marriage and family growth, without reentry rate percentages enjoyed by other areas of the labor market, e.g. nursing and teaching
4. Relatively low pay scales, especially for the dental assistant.

It was understood that the dental laboratory technician, for the

most part, is affected by Item 1 only. This, however, is perhaps the most critical factor of all those listed.

These shortages can best be alleviated by positive action relative to the above problem areas. Recruitment for dental team members should be started early, surely at the 9th grade level in as many schools as possible; should include all students, male, female, minority, and majority groups; and should continue up to the time of matriculation in respective programs.

*How can junior and community colleges be utilized in training dental auxiliaries?*

Junior and community colleges certainly should be utilized in the development and expansion of present and new programs to train all types of dental auxiliaries. They can serve also as centers for continuing education for local dental team members, and as centers for recruitment activity. By stimulated, progressive action they can serve as models for development of optimum auxiliary utilization in a community. If clinical training within these centers is difficult or impossible to effect, cooperative action with adjacent university dental schools could be considered as an advantageous solution to both institutions.

*How can dentists, dental societies, and dental educators best cooperate with junior and community colleges in establishing training programs for dental auxiliaries?*

All groups concerned with dental productivity should cooperate with junior and community colleges in establishing educational programs for dental auxiliaries. This can be done by assisting with recruitment, providing clinical facilities for training if necessary, serving as advisors where and when needed, acting as liaisons, helping to establish new objectives and goals as indicated: in short, to serve in a supportive and encouraging manner in as many ways as possible.

#### RECOMMENDATIONS

1. *THAT* each state proceed with due speed to inform responsible legislators and formulate revised dental practice acts, if necessary, which are designed to allow broad interpretation of auxiliary function. We would further urge that duties of auxiliaries not be

spelled out in the legislative act but rather be regulated and controlled by authority of the state board of dental examiners.

The need for well designed, practical, and approved educational procedures to prepare the auxiliary for expanded duties must also be acknowledged.

This recommendation supports the recent action of the American Dental Association relative to proposed revision of dental practice acts.

2. *THAT* urgent attention be directed toward increased support and activity of all existing Dental Auxiliary Utilization programs in present dental schools and those to be activated, through:

1. Increased federal financial support
2. Matching institutional financial support at the highest possible level
3. Exposure of the student to the trained auxiliary in all phases of clinical dentistry
4. Exploration of other possible avenues of financial support in order to meet the optimum objective of providing auxiliary assistance to all students during all clinical periods.

3. *THAT* the principle of continuing education relative to exposure of the entire dental team to established and new concepts of effective auxiliary utilization be carried out through all possible means, with as much haste as practically possible. This should include involvement of dental schools, state dental health departments, federal agencies where applicable, and community and junior colleges, by presenting short or extended programs as best suits need and demand.

4. *THAT* all dental team members be advised clearly of the changing composition of the dental team, including as it does an ever-increasing degree of separate skills and functions. At least five dental auxiliary positions are clearly identifiable and necessary as separate entities at this time: a) dental hygienist, b) chairside assistant, c) secretary-receptionist, d) laboratory technician, and e) business manager.

5. *THAT* the group practice of dentistry, including all services of diagnostic and clinical care, be encouraged in order to promote increased productivity.

6. *THAT* all preventive concepts and technics available be utilized by all members of the dental team, with proper delegation to respective members, to most effectively utilize manpower in order to reduce need by reduction of dental disease through prevention.

7. *THAT* close cooperation and liaison, as applicable, involving universities, junior and community colleges, state boards of dental examiners, and all related dental groups, be developed and maintained in order to:

1. Establish new and expanded centers for educating dentists and all types of auxiliaries;
2. Support and aid in recruitment of students to the dental profession in all categories;
3. Encourage equal opportunity for all qualified candidates of either sex in all categories.

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# The Development and Administration of Dental Programs

## REPORT OF STUDY GROUP III

In responding to the charge "to describe methods by which group dental care programs can be developed and implemented," this Group identified eight major areas deserving consideration and concerning which recommendations could be developed. It should be mentioned that for the purposes of this Report, "dental care programs" refer to all programs in which a third party is involved in the payment for services rendered. Unless specifically indicated, it is assumed that most recommendations have relevancy to programs initiated by both the federal government and the private sector.

To assist in the organization, development, and implementation of dental care programs, it is *recommended*:

1. *THAT* a State Dental Health Planning Advisory Committee be organized by all constituent dental associations.

The Committee shall be composed of:

- Representatives of the Council on Dental Health, the Council on Dental Care Programs or their counterparts in the association
- Representatives of the Dental Service Corporation
- Dentists specially trained in dental health planning, i.e. from dental schools, schools of public health, and health departments, and
- Though not formal members of the committee, non-dental consultants are to be utilized as needed.

The functions of the committee shall include:

- To assist in the planning and implementation of publicly and privately funded dental care programs
- To serve in an advisory capacity to the dentist or dentists serving on the State Comprehensive Health Planning Council
- To identify dental health needs and to call these needs to the attention of appropriate funding agencies
- To review health programs which are active or being planned within the state and, where applicable, call to the attention of the proper agency, the dental implications of these programs
- To advise that similar committees be developed at the component level, and
- To render a report, at least annually, to the members of the association

in order that the profession at large may be apprised of all programs involving dental care which are operating within the state.

2. *THAT* Dental Health Planning Committees be organized in each component society of the constituent association. This committee shall participate in the planning and implementation of all dental care programs at the community level, co-ordinating its activities with the state Committee when indicated.

3. *THAT* the officers of constituent associations take such action as is necessary to assure the appointment of at least one dentist to the State Comprehensive Health Planning Council. It is further recommended that action be taken in cooperation with other constituent associations to accomplish the appointment of a dentist to the Regional Comprehensive Health Planning Council.

4. *THAT* the dental profession, as represented by the American Dental Association and in cooperation with other health professions, direct efforts toward the appointment of a Secretary of Health with Cabinet status.

Group III wishes to record its support of the recommendation of the American Dental Association that the Division of Dental Health of the United States Public Health Service be designated to coordinate the federal aspects of all community dental care programs.

#### A. DELIVERY OF CARE

Even though the Group presents nothing that is completely new, it does think that there are several little used methods upon which greater emphasis should be placed. It is emphatically emphasized that wherever possible care should be provided in the facility of the private practitioner.

(1) Group practice (Grouping of practitioners\*) may have some distinct advantages, mainly,

(a) The providing of more hours of availability, and

(b) The providing of the accessibility of specialized services to both patient and attending practitioners. There are problems in this area with both the Internal Revenue Service and the dental practice acts of some states that must be resolved before a grouping of practitioners can be a more practical method.

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\* At the final general session it was approved that the phrase "group practice" be changed, here and wherever it appears in the Report, to "grouping of practitioners." This was to make it clear that the Group was not referring to a closed panel program.

(2) Better methods of providing services to the homebound (chronically ill, aged, and handicapped) must be developed. The use of portable equipment needs to be encouraged, with functional equipment being made available to dentists. Training in these areas needs to be developed with the cooperation of dental schools.

(3) It is urged that facilities for dental care be required in larger convalescent and nursing homes. Also, this thought is extended to hospitals where, if they are to be total health centers, proper facilities should be available for dental care as an essential health service.

(4) The providing of dental care in rural areas needs to be expanded. Young men in particular should be motivated for these services. The use of mobile offices should be developed further, providing the accessibility of such equipment is made possible by rental or lease arrangements. The private practice concept would be encouraged with such considerations.

(5) The thought could be developed encouraging Neighborhood Health Centers to contract with teaching institutions (medical and dental schools) for the providing of services by students under direct supervision. This thought has developed when one considers that teaching facilities may well be deprived of patients seeking services there with the increase of federally supported programs for the indigent. This indicates a need for change in policy at the Office of Economic Opportunity level.

#### B. MANPOWER PROBLEM

(1) It is essential that more efficient use of existing facilities and personnel (dentist and auxiliaries) must be developed. Two thoughts in this area are the expansion of duties by auxiliaries under the direct supervision of attending dentists, and the year round operation of dental schools.

(2) There apparently must be more federal and state support for the expansion of dental schools, where surveys indicate the need, providing for larger classes in existing schools.

(3) Incumbent with this must be programs developed to train and provide dental educators to properly staff these institutions, and

(4) There must be a further development of schools for the training of auxiliaries—hygienists, assistants, and laboratory techni-

cians. In this training, provisions should be developed to allow vertical mobility so that auxiliaries are not limited to one area of auxiliary service according to their abilities and desires.

#### C. UTILIZATION OF AUXILIARIES

The treatment requirements of the public demand that serious attention be given to the delegation of further duties to auxiliary personnel, specifically the hygienist and the assistant. Existing American Dental Association policy should be reiterated that the constituent dental associations, in cooperation with the state boards of dental examiners should work diligently in this area to allow for the expansion of the duties of auxiliaries. It is also noted that surveys and statistics have noted that dentists efficiently using auxiliaries see more patients and provide more services.

#### D. DISTRIBUTION

There is a shortage of dental manpower most notable in rural and semi-rural areas. Highly urbanized areas have near adequate supply of practitioners although it is noted that poor distribution exists in these areas. It is *recommended*:

5. *THAT* component dental societies give serious thought to the providing of services in urban ghettos and poverty pockets. Component societies in cooperation with local health departments might consider the establishment of part time facilities with multiple dentists in the area spending time servicing the facility. (In this regard, reference was made under "Delivery of Care" for new methods of arrangements with Neighborhood Health Centers.)

A challenge must be thrown to the profession that if no other methods are feasible, or if there are no practical working possibilities, that the closed panel type of practice may have to be considered as acceptable.

[At the final general session it was voted to delete the above paragraph and substitute the following:

The profession must recognize the challenge of developing new ways of adapting private practice to meet the needs of the indigent in order to avoid the development of closed panel clinics.]

Recruitment of dental students from rural and semi-rural areas needs to be upgraded. Increased support for dental students agreeing to obligate themselves to practice in specified rural areas should

be continued and encouraged; this has not been effective to date. There should be a development of programs in dental schools promoting interest in rural area practice. Informational areas at the dental school level are encouraged concerning the location of needy rural areas, and should cooperate with knowledgeable people in those areas, e.g. town officials, service clubs, and the like. Certainly, the concept of mobile offices mentioned earlier has implications here. Finally, local societies should take more active participation in providing leadership in the location of dental offices through strong committees to present opportunities for dentists. This should be in cooperation with state boards of dental examiners and dental schools.

#### E. TYPES AND TRAINING OF ADMINISTRATORS

The projections by several essayists at this Workshop have again reinforced the need for the dental profession to conserve its manpower resources for the primary function of providing dental care. It is *recommended*:

6. *THAT* attempts be made to recruit and train administrators in the following categories:

*Private practice.* A new type of administrative person is needed to improve the productivity of private dental practice. We would call this person a "dental office administrator." This person would be trained in cooperation with dental schools and dental associations. He would relate to dentistry as a member of an allied profession much as dental hygiene.

These persons could serve either a sizable grouping of practitioners or a number of individual practices on an independent basis. Dental office administrators would help design the office, select equipment, purchase supplies, and help train personnel. They could also handle record systems, taxes, and accounts. As the young dentist's practice develops, and the number of patients increase, the dental office administrator could guide him into increasingly complex and productive office operation.

Recruiting and training could be done in one of two ways. Persons with training and experience in business could receive additional background in dentistry and dental practice administration. Individuals with a dental background (students withdrawing from dental school, or former armed forces corpsmen) could learn the



general principles of practice administration and business management.

*Group dental care.* There will continue to be a great need for dentists with special competence in administrative dentistry, dental care administration, and public health dentistry. In some cases, these persons will be those who, while in practice, indicated interest and skill in administration.

In the future the preferable route would be to interest capable dental students in the field and direct them to graduate programs in dental public health, medical care administration, or public administration. This can probably best be done by strengthening departments of preventive dentistry and community health. The staff of these departments can identify students with interest and talent along these lines.

The dentist-administrators will function primarily in federal agencies administering health programs, similar official agencies at the state level, and the dental service corporations. In time some may be expected to be found in university settings concerned primarily with teaching and research.

*Administrative aide.* The administrative aide will serve in two capacities. In large programs this person would handle the day-to-day operating details for the dentist-administrator who would provide general supervision and high-level dental leadership. In smaller programs the professional leadership would need to come from practicing dentists serving as consultants or members of review panels. In this case the administrative aide would have a stronger role to play since he (or she) would handle most of the operating functions.

These individuals might be recruited from university schools of business. In some instances potential students might have background in business, public health, or a field related to dentistry, including dental hygiene. Again, dental students with good academic grades who withdraw from school because of a lack of interest or skill in the technical aspects of practice should be considered.

The educational opportunities now available are limited to a one year Master of Public Health degree, with a major in medical care administration or public health administration offered by a few schools of public health. A Bachelor of Arts degree is the minimum requirement for admission to programs of this type. Dental schools should be encouraged to experiment with the development of new

educational offerings designed specifically for the preparation of this type of personnel.

#### F. FACILITIES

It is recognized that many more and probably some new facilities must be developed to accommodate dental care programs of the future. It is *recommended*:

7. *THAT* before any new facility is developed in a given community, the area should be surveyed carefully in order to ascertain that all available facilities are being used to a maximum extent. It follows that no investment should be made in new facilities if the capacity to absorb a new clinical program can be identified. Further, it is *recommended*:

8. *THAT*, when possible, dental care programs should use the private office of the dentist as the facility in which clinical care is provided.

It is in the private office that the best and most efficient dentistry can be performed. Rather than invest funds in equipment and fixed installations, first priority should be given to investment in staff, facilities for family education, appointment scheduling, transportation, and follow-up. Also, this recommendation is made on the basis of substantial (although incomplete) evidence that dental care provided through public clinics meets the immediate need for restoration of function, but does not meet the long term goal of maintenance of the natural dentition by the continued seeking of care by the patient, and the following of a regime of personal health habits.

In order to indicate the variety of facilities which can be utilized in providing clinical care, the following list is provided. In planning new programs, priorities should be placed on the fullest possible use of private dental facilities.

#### *Urban areas*

Private office

Grouping of practitioners

Hospital complex

Hospital dental clinic

Public school clinic

Health department clinic and community health center

Dental school clinic

Voluntary non-profit organization clinic

Clinics in nursing and convalescent homes

*Rural areas*

Private office  
Public school clinic  
Health department clinic  
Dental trailers  
Mobile dental vans

Investment should also be made in portable equipment which can be taken to small nursing homes and homebound patients in both urban and rural areas.

Dental schools should take an active role in the planning of community dental programs and in the provision of services, as these functions relate to the furtherance of their educational and research programs.

In discussing physical facilities, it is germane to comment that the office hours during which services can be provided should be scheduled and expanded in order that maximum use of these facilities is possible.

#### G. QUALITY REVIEW

It is recognized that one of the responsibilities incumbent upon the dental profession concomitant with the privileges it enjoys is self-criticism directed toward the provision of quality care. In face of increasing numbers of dental care plans and programs, it is imperative that the profession assume the initiative in providing the mechanisms of quality assurance. It is *recommended*:

9. *THAT* Quality Control Committees be developed as standing committees at the constituent and component society levels.

Such a committee at the state level may represent an expansion of the current review committee which relates to existing prepayment plans, e.g. dental service corporations and insurance plans. It is assumed that at the local level, it would be necessary to develop a new committee.

It is anticipated that the existence of such committees would make it possible to offer a choice of approaches to quality assurance to purchasers of dental care programs. A standardized procedure could be implemented providing for a review of a given percentage of all patients treated. An alternative approach would be one in which the committee investigates and makes recommendations upon complaints which arise from patients or anyone maintaining the program. In extreme cases of quality negligence, it is suggested that the committee present the matter to the State Board of Dental Examiners for suspension or possible license revocation.

The assurance of quality care is not limited merely to the treatment which is provided. It is *recommended*:

10. *THAT*, in order to provide a high quality of care, those who plan dental care programs provide for:

- a) the use of adequate personnel
- b) proper facilities
- c) sufficient reimbursement for services rendered, and
- d) optimum use of modern educational methods, preventive techniques, and corrective services.

#### H. PRIORITY OF SERVICES AND THE SPECIALIST'S ROLE

It is appropriate that the profession provide advice concerning those services, in order of priority, which should be included in dental care programs.

Since the prevention and control of dental disease in the younger age groups would contribute most significantly to the dental health of the nation, then dental care for children should have priority in all health programs. It seems unnecessary to expand here on how such a program should be constituted in light of the Dental Health Program for Children which has been developed and approved by the American Dental Association. To quote from the paper by Dr. F. Gene Dixon at this Workshop on Sunday evening, this is a program that "stands out as the dental profession's ideal dental care program. Many of the recommendations set forth in the program could be used in other types of dental care programs, including such points as professional guidance and consultation at all levels in program planning, full use of preventive measures, periodic evaluation, expansion of the productivity of dental personnel, advisory committees at national, state, and local levels, and suggestions for pilot projects." Accordingly, it is *recommended*:

11. *THAT* the statement of the ADA Dental Health Program for Children be used as a guide to those who plan any dental care program in the future. Detailed recommendations of services and priorities for children are contained therein.

At the present time, dental care programs for adults should be directed toward:

- a) relief of pain
- b) treatment of diseased tissues and dentofacial injuries, and
- c) replacement of teeth to provide function, comfort, and health.

The priority of need for care can best be determined for the individual by professional dental judgment. Programs should provide *at least* the above mentioned services, and in addition as many other

services as resources will permit. It should be kept in mind that an adult's ability to obtain and maintain employment, and to become or remain self-sufficient can depend on health and acceptable appearance. It must be emphasized again, however, that in all dental care programs, in the interest of optimum health and well being, preventive services and health education should be given priority consideration.

It is necessary that the profession identify the role of specialists and specialty groups in future dental care programs. In the opinion of this Group, all recognized specialties should be involved to some extent in the planning and implementing of such programs. Public Health Dentistry in particular, should play an active role in planning and evaluation. The degree to which other specialists are utilized will depend on the nature of the program under consideration.

As much as possible, the same general practitioner-specialist relationship should prevail in dental care programs as it does in other aspects of practice, and should be based on the need of the patient and effectiveness of the service available and indicated. When specialists receive referrals directly from an administrative agency, the patient should receive care the specialty covers when consistent with the total treatment the patient will be receiving.

It is recommended that in all publicly funded programs, orthodontic treatment will be limited to handicapping malocclusions as defined by the American Association of Orthodontists and as determined using the AAO assessment procedure. To assure quality care, orthodontic treatment should be rendered by a dentist with recognized competence to properly diagnose and treat the particular case. The same policy should be applied to the other specialty areas of dental care.

[NOTE: At the final general session there was considerable discussion of the wording of the above paragraph, particularly in relation to the reference to orthodontic treatment. A motion to delete the paragraph was defeated. Suggestions for restating the paragraph then were made. Subsequently, Dr. Kenneth J. Ryan and Dr. Alvin L. Morris, Chairman and Recorder of Study Group III, after reviewing the stenotype report, prepared the following substitute statement:

Group III recognizes that in all publicly funded programs certain limitations of the scope of treatment may be necessary, particularly in the areas of recognized specialties. To assure quality care, special treatment should be rendered by a dentist with competence to prop-



erly diagnose and treat the particular case. As an example, the American Association of Orthodontists have suggested a policy that under publicly funded programs orthodontic treatment should be limited to handicapping malocclusions as determined by the AAO assessment procedures. All specialty areas should consider and develop guidelines for limitations of treatment under publicly funded programs.]

#### ADDENDUM

This Group attempted to review the Report of the National Advisory Commission on Health Manpower in an attempt to relate it to the decisions and recommendations of this Workshop. It was apparent that some of the recommendations therein were applicable to the dental profession and paralleled the conclusions of this group. Others were not relevant to the dental profession. Still others appeared unwise and inappropriate in the light of present experience. Because this Report was only recently available no definite statement could be recommended to the Workshop. The implications of many of the statements in the Report caused grave concern to this Group. It is *recommended*:

12. *THAT* the Board of Regents of the American College of Dentists inform the College membership of the Report and to ask appropriate committees of the College to cooperate with agencies of the American Dental Association in studying the proposals made therein.

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# Communications Technology: Its Utilization in Improving the Delivery of Dental Health Services

## REPORT OF STUDY GROUP IV

Three target groups were selected for discussion in the following sequence:

1. The dentist and his auxiliaries, including the developing professional (student).
2. The public as a composite target and the dental patient as an individual.
3. The family of agencies and institutions concerned with dental health and communications.

The relationship between communications technology and the manpower problem was explored as a framework for discussion. It was concluded that the increased utilization of communications technology required to meet fully the needs of the profession would contribute to the solution and, at least in one sense, would also contribute to the manpower problem.

On the positive side, communications technology represents an important part of the essential "education link" between new knowledge, methods, and programs. It is obvious that new communications technology represents the most efficient method for rapid transfer of information and instruction to the many individuals and organizations through which improvement in the delivery of dental health services must take place. The full utilization of communications technology is unique in that it exhibits the greatest potential for keeping the flow of knowledge consistent with the rapid pace of change in the health field.

Increasing the utilization of communications technology to any appreciable extent, however, will also add to the manpower problem. In addition to the need for dental manpower, a full complement of non-dental communications personnel will be required to establish and maintain a broad, functioning system. Such personnel, who must be recruited and trained to function effectively in the dental field, will range from graphics and audio-visual specialists to the educational psychologist and sociologist.

Another important general consideration is the fact that communications, whether by means of new and sophisticated technology or the old-fashioned face-to-face system, is a two way street. It is incumbent upon the leadership in the profession to listen as well as talk, to receive as well as send. To be successful any communication must reflect the attitudes, the needs, and the desires of the target populations.

It was apparent to the Group that traditional methods and systems still continue to play an important role in the transmission of information. New communications technology has relevance, at this time, to somewhat limited target groups. It is expected, however, that many of the traditional communication methods referred to throughout the recommendations of this Report may be replaced as advanced communication systems become established throughout the nation.

#### I. COMMUNICATIONS DIRECTED TOWARD THE DENTIST, AUXILIARIES, AND STUDENTS

Several serious communications gaps were identified by the Group which impede the prompt dissemination of information to the dentist and his auxiliaries. The scope and effectiveness of communications needs to be improved by strengthening the framework and improving methods for communications between the leadership of the profession and the practitioner at national, state, and local levels. In addition to communications within the professional work force, improved communication is needed between the profession and students in dental and other educational institutions. In view of the urgency for extending broadly the flow of information within the profession, the application of new communications technology at state and local levels needs to be encouraged.

##### A. *Dentists*

It is *recommended*:

1. *THAT* a Bureau of Constituent Society Services be established within the American Dental Association. This Bureau would, among other services, provide an instrument to facilitate communications between the national body and the constituent and component groups.

2. *THAT* constituent dental societies establish state inter-agency

communications committees which will include representatives of the state and local dental organizations, the dental school(s), the dental division of the state health department, dental examiners, and federal and other agencies. The primary function of the committee would be to identify and communicate information about problems and issues of concern to these respective organizations and the profession in general.

3. *THAT* constituent and component dental societies establish a full time or part time staff to provide a continuing administrative structure and that they also create a representative governing body, such as a House of Delegates, where feasible.

4. *THAT* constituent societies sponsor periodic state and local conferences, particularly to provide information about third party sponsored programs.

5. *THAT* the American Dental Association seek funds for demonstration and evaluative projects designed to adapt new communications technology to the special needs of the profession.

6. *THAT* pilot systems utilizing new communications technology be included in the programs of the ADA National Dental Health Program for Children.

#### B. *Dental Auxiliaries*

*It is recommended:*

7. *THAT* dental societies sponsor special conferences for auxiliaries on problems and issues facing the profession.

8. *THAT* dentists encourage their auxiliaries to join their respective auxiliary organizations and provide dues payment as a fringe benefit of employment.

#### C. *Students in Dental and other Educational Institutions*

*It is recommended:*

9. *THAT* every school of dentistry establish a Department of Community Dentistry to emphasize the social responsibilities of the dentist and that the U.S. Public Health Service increase its financial support for this purpose.

10. *THAT* the American Dental Association provide markedly increased program support for student dental societies.

11. *THAT* the constituent and component dental societies develop new and more effective dialogue with student dental societies.

12. *THAT* the profession at all organizational levels intensify communications with students, teachers, and counselors at all levels of education.

## II. CONTINUING EDUCATION FOR DENTISTS

The paucity of resources and continuing education opportunities for the nation's dentists is well recognized by professional and governmental organizations. Lack of teaching manpower for continuing education and the broad geographic dispersion of dentists throughout the nation are major blocks to solving the continuing education problem through traditional methods. Self-instructional, automated methods based on new communications technology can play a significant and major role in the development of a practical system for the continuing education of the dentist and his auxiliaries.

It is *recommended*:

13. *THAT* the American Dental Association establish a national inter-organizational committee including representation from organized dentistry, licensure bodies, educational institutions, and voluntary and official health agencies to stimulate, coordinate, and guide the development of a nationwide continuing education system utilizing new communications technology.

14. *THAT* this proposed national inter-organizational committee evaluate existing instructional methods, media, and systems, and propose a single system which would reduce fragmentation of effort and resources and encourage profession-wide utilization of instructional programs.

15. *THAT* the dental schools of the nation greatly expand their present resources and programs of continuing education and that the U.S. Public Health Service increase its financial support for this purpose.

16. *THAT* the profession at all levels encourage the expansion of traditional continuing education activities, such as study clubs and inter-office visitations.

## III. COMMUNICATIONS AIMED AT THE PUBLIC

Communication with the public may be divided into two components, the general public which can be reached through existing mass media such as press, radio, and television, and the individual patient who comes to the dental office or clinic. Communications techniques



for each of these sub-groups is likely to be different. Of particular importance is the need to develop programs and materials aimed specifically at motivating the public to seek care, and to build better dental health values.

#### A. *The General Public*

It is recommended:

17. *THAT* the pilot projects of the ADA National Dental Health Program for Children include experimental health education features aimed at (a) motivating specific segments of the population to seek care, and (b) building lifelong dental health values.

18. *THAT* federal and other agencies increase support for research and evaluative studies in the use of mass media for the dissemination of dental health information and dental health education, and for the development of effective motivational techniques designed to increase utilization of dental health services.

19. *THAT* community-school dental health councils be established to stimulate and increase dialogue between school administrators, teachers, and the dental profession.

20. *THAT* constituent and component societies establish year round programs of public information and dental health education.

21. *THAT* constituent and component societies require all third party payment programs to have educational and informational activities, designed to increase utilization, as a prerequisite for dentist participation.

#### B. *The Individual Patient*

Discussion of the use of new communications technology for patient education in dental offices and clinics aroused strong divergence of opinion. Some members of the Group thought that new communications technology had great potential for patient education in a wide variety of circumstances. Other members felt that teaching machines, audio-visual methods, and automated teaching approaches are too impersonal and ineffective. These persons believed that efforts should continue to be directed primarily toward encouraging the dentist to increase the time and effort he devotes personally to patient education.

The outcome of the discussion was that, with the personal involvement of the dentist as the principal figure in patient education,

new communications technology could be used to effectively supplement and enrich the health education of the patient.

*It is recommended:*

22. *THAT* every practicing dentist utilize the valuable time available to him when the patient is in the chair (the teachable moment) to transmit relevant information about dental health.

23. *THAT* every dental office develop a systematic approach to patient education.

24. *THAT* dental auxiliaries in dental offices and clinics be delegated markedly increased responsibility in patient education.

25. *THAT* dental schools intensify their efforts to prepare students for effectively educating their patients by providing formal course work and clinical experience.

26. *THAT* the American Dental Association and the U.S. Public Health Service develop standards for equipment and materials used in automated patient educational systems for dental offices and clinics.

27. *THAT* experimental patient education systems for offices and clinics that include the use of new instructive-communications methods be incorporated into the pilot projects of the ADA Dental Health Program for Children.

#### IV. AGENCIES AND INSTITUTIONS CONCERNED WITH DENTAL HEALTH SERVICES

The number of organizations and agencies with direct concern for dental health services is increasing at a rapid rate. The proliferation of governmental sponsored programs, the increase of labor-welfare sponsored programs, and the escalation of other third party plans has made effective communications with all of these organizations a very complex matter. The fact that persons in responsible positions in these organizations are not dentists further complicates the problem. These persons frequently have no background upon which to draw in making decisions of extreme importance to the dental profession. Representatives of this family of agencies and institutions constitute a special target group.

*It is recommended:*

28. *THAT* state dental associations immediately establish a dental service corporation or similar agency to coordinate and systematize communications from the profession to third party representatives.

29. *THAT* the American College of Dentists sponsor a series of regional conferences designed to provide general and specific information to third party representatives about dental health, preventive practices, dental care, public and patient education, dental economics, and the nature and character of dental practice.

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# Reorientation of Personnel for Dental Health Services in the 1970s

## REPORT OF STUDY GROUP V

At the outset, this Group accepted the Workshop hypothesis that the dental health team is not prepared to meet the increased responsibility for total dental health care of the public expected in the 1970s. It recognized that this lack of preparedness is due to many factors among which are (1) insufficient manpower, and (2) inefficient use of manpower.

The charge given to the Group implies that a reorientation of personnel is necessary in order to overcome the insufficiencies above, but does not suggest what this orientation is to be. However, it can be assumed that a more efficient system can be evolved, and that it is necessary to change the thinking of personnel to accept and implement this change.

## DEFINITION OF OBJECTIVES

For clarification, the Group defined its topic to mean the education and training of the dental health team including dentists, hygienists, assistants, and laboratory technicians, so that they can and will provide improved dental health services for more people. It was recognized that many persons in many walks of life would have to be reoriented in order to obtain the stated goal, but it was not considered within the purview of this group to deal with those other than the dental team.

The effect of this definition is to focus attention on the existing members of the dental health team and on the continuing education of this team.

## QUALIFYING STATEMENT

Continuing education has been available to members of the dental health team for many years and has made great strides recently. However, it has not and does not now have the full participation of all dental personnel. Without this full participation, whatever recommendations made by this Group would be mere platitudes. It was the opinion, therefore, that a recommendation from the "Workshop on Enhancing the Image of Dentistry," sponsored by the American

College of Dentists in 1965, which stated (J. Am. Col. Den. 32:216, July 1965), "That dental societies and licensing boards study the feasibility of requiring evidence of continuing education as a requirement for membership or licensure" be strengthened.

Furthermore, the recent Report of the National Advisory Commission on Health Manpower (Vol. 1, p. 42, Nov. 1967) recommended that "professional societies and state governments should explore the possibility of periodic relicensing of physicians and other health professionals. Relicensure should be granted either upon certification of acceptable performance in continuing education programs or upon the basis of challenge examinations in the practitioner's specialty."

Moreover, the first principle of ethics of the American Dental Association, the position of the American College of Dentists, and the policy of many dental societies state that continuing education is the responsibility of every dentist throughout his professional life. In view of these statements and the urgent need for reorientation and change, it is *recommended*:

1. *THAT* the American Dental Association take immediate steps to make continuing professional education a requirement for continuing membership, and dental auxiliary groups are urged to take similar action.

[NOTE: This recommendation led to considerable discussion at the last general session of the Workshop. It was finally approved to read:

1. *THAT* the American Dental Association encourage state boards of dental examiners to make continuing education a requirement for maintaining state licensure.]

#### AREAS FOR EMPHASIS

In determining the role of continuing education in improving the dental health services in the 1970s, it was agreed that the three areas of greatest concern for reorientation of personnel are, (a) practice methods, e.g. group practice, (b) use of auxiliary personnel, and (c) social responsibility to the public and the community.

All of these were focal points cited in one or more of the formal presentations of the Study Groups of the 1965 "Workshop on Enhancing the Image of Dentistry," and it was not thought necessary to elaborate further on details in these areas.



## APPROACHES TO CONTINUING EDUCATION

While traditional and worthwhile means of continuing education—study clubs, society meetings, refresher courses, teaching teams, etc.—should be utilized, it is essential that a variety of innovative methods be employed. What is wanted and needed is a new learning environment for dentists and their auxiliaries as well as reevaluation, reorganization, and subsequent coordination of existing programs and resources.

This environment might be individual or group programmed instruction, television, a series of demonstration projects to serve as models in the delivery of dental care, or workshops sponsored by constituent and component societies. Whatever their specific nature, three essential elements are necessary to their development.

First, the practicing dentist must be involved in the planning of the curriculum and the method of presentation. Too little attention has been given in the past to the consumers of instruction.

Second, there is a need for consultation and direction from experts in the "science of learning." The psychologist, the communications technologist, the programmer, and the subject matter expert, should share responsibility in the development of specific courses and programs.

A third essential is adequate funding to permit the development of curriculums and material of high quality and sufficient scope.

These programs should be under the sponsorship of a recognized organization or agency acceptable to the dental society.

Continuing education should be one of the major responsibilities of all schools and organizations concerned with the delivery of dental care and not the exclusive property of any one or two. The initiation and conduct of courses in continuing education should result from the needs of the dentist and his auxiliaries, and determination of the needs should be the responsibility of the professional or auxiliary organization. Dental and dental auxiliary schools should accept continuing education as a primary responsibility and should serve as resource centers for faculty, facilities, educational materials, planners, etc. to meet the needs of the professional and his auxiliaries. It is *recommended*:

2. *THAT* joint planning committees be developed, in relation to continuing education programs, composed of members of dental and dental auxiliary organizations and the appropriate schools, and also

to include representatives of the dental divisions of state health departments and the federal services.

3. *THAT* joint planning committees should develop master plans and seek funds for providing regional continuing educational programs and guidelines for continuing education course planning.

4. *THAT* constituent and component dental and dental auxiliary organizations share financial support for continuing education programs conducted by the schools.

5. *THAT* joint planning committees survey the dental work force to determine priorities for subject matter, course scheduling, and locations for the courses, to ensure maximum participation.

6. *THAT* joint planning committees evaluate the effectiveness of the various courses.

7. *THAT* continuing education should not be limited to those subjects directly related to dentistry, but include areas that might have "spin off" benefits, e.g. sociologically-oriented courses to provide better understanding of the needs, fears, and desires of the underprivileged, as well as patient groups which require special care in their treatment such as the chronically ill, aged, and handicapped.

#### ROLE OF RESEARCH

In order to take every step possible to insure the application of continuing education to the objectives of this Workshop, a vigorous program of research and evaluation will be necessary. This will entail further studies for more effective and efficient instructional methodology, as well as the continuous evaluation of results. It is *recommended*:

8. *THAT* the American College of Dentists sponsor and promote such research to determine the follow-up on this Workshop. Evaluation of the effects of initiating these programs will serve as a springboard for future planning.

#### FOCUS OF CONTINUING EDUCATION

Three areas were cited at the outset for the focus of continuing education programs for the dental health team, (1) methods of practice, (2) use of auxiliaries, and (3) social responsibility. These three areas need special attention in order to stimulate a more efficient dental service for the public. Research is in progress and much more is needed to clarify the most effective means of providing better den-

tal services to more people. Moreover, effective preventive programs, group practice, full utilization of auxiliary personnel, and acceptance of responsibility for the dental welfare of the public are areas which merit consideration.

In all continuing education programs for individual or collective components of the dental health team, the overriding concept should be one of prevention. Prevention is defined here as those primary and secondary preventive measures which tend to have a cumulative effect in reducing the incidence and progression of dental disease. Major emphasis should be directed toward strengthening the primary preventive aspects of these educational programs. It is *recommended*:

9. *THAT* dental societies, schools, and other agencies develop continuing education programs in keeping with the preventive concept of practice, regardless of the student group for whom instruction is planned.

Experience in the Dental Auxiliary Utilization programs, sponsored by the U.S. Public Health Service in the dental schools, has demonstrated the best means of encouraging the subsequent utilization of chairside dental assistants. Opportunities of continuing education in this concept of care should also be afforded the practicing dentist. It is suggested that schools develop programs which permit the practitioner opportunities for learning while working as a member of the dental health team.

Similarly, if the team approach to supplying dental services is to be encouraged, the dental student must be placed in this functioning environment as a part of his undergraduate experience. Team concepts involving all auxiliary functions that will improve quality and yet increase production within the dental office should be included. It is *recommended*:

10. *THAT* dental schools implement programs which will provide training in the management and administration of the total dental health team for the undergraduate as well as the continuing education student.

The dental health team is responsible for the oral health needs of the public by virtue of their specialized knowledge and skills. They must also be the true guardians of the oral health of their patients and their communities. It is necessary for the dental team to be readily concerned with public health problems on a broad scale, and

it is essential that they are able to provide dental health services for those that need it. It should be a basic responsibility of dental schools, societies, and practitioners as well as all auxiliaries and auxiliary groups, to use every means possible to instill in the minds of the dental team an attitude of service to the public. In order to do this an effort should be made to provide the mechanism for recognition of the problem, understanding of the social aspects, and methods for application of remedial dental health measures under conditions of poverty, squalor, and disadvantage. The dental team should be allied closely with the programs designed to meet the needs of the underprivileged. It is *recommended*:

11. *THAT* members of the dental health team participate and be included in the planning, organization, and activation of community dental health programs along with those qualified and skilled in social welfare management and other related matters.

Dental education must rediscover the student as must dental practice rediscover the patient. Students will have a stronger voice in their education as has become evident on many college campuses. Greater flexibility in the dental curriculum, increased dialogue between student and teacher, and more opportunities within limits for the individual student to learn at his own pace will likely become educational landmarks during the 1970s.

Concern for the whole patient, instead of unit services which meet a clinical requirement, and emphasis on the prevention of disease rather than its treatment, are concepts that must become basic if dental education is to meet the needs of the next decade. The thread of prevention must weave throughout the whole curriculum.

Dental curriculums must provide opportunities for students to actively participate in the care of the sick, the very young, the aged, the handicapped, and the underprivileged, as well as provide opportunities for the student to think, to explore, to seek knowledge, and to adapt to change.

#### EMERGING PROBLEMS OF ADMINISTRATION

The elevation of importance and stepping up of activity of continuing education programs emphasized in this Report can place an increased burden on dental administrators for the management, guidance, and quality control of courses, scientific programs, dental health programs, and many other aspects of total health problems. It is ex-

pected that societies representing the dental team will play a major role in the total program and therefore must provide capable administrative personnel to achieve continuity and long range support. It is *recommended*:

12. *THAT* involved societies establish central offices with full or part time trained personnel and that such offices be implemented at the earliest opportunity where not now active.

13. *THAT* dental administrators be well schooled in administrative, planning, and management skills as well as in sound technics for exercising quality control. Numerous courses in public administration and management are available to provide this training.

Such administrative persons may well serve as catalytic agents in stimulating maximum participation in continuing education and dental care programs.

An additional inducement which encourages the attendance and participation of dental auxiliaries in continuing education programs of this nature relates to financial support. The profession should afford financial assistance to dental auxiliaries for this purpose. It is *recommended*:

14. *THAT* the attendance of auxiliaries in continuing education courses which increase their capacity to deliver care should be considered in determining remuneration for their services.

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# A Summing Up

JAMES H. SIMMONS, D.D.S.

MEETING dental needs in the 1970s, and beyond, presents a problem that should be evaluated by a homogenous, knowledgeable group. The purpose of this Workshop was to bring together such a group. It is satisfying to note that the Workshop included the following: 50 general practitioners, 12 specialists, 28 educators, 10 ADA Staff members, 9 dental administrators, 6 members of state Health Departments, 6 from the U.S. Public Health Service, 4 dental hygienists, 3 from the Military Services, 2 from the Veterans Administration, 2 representing dental assistants, 2 laboratory owners, and 1 dental student. The total attendance was 135. Some of the general practitioners and specialists were also members of State Boards of Dental Examiners. Thirty-four states and the District of Columbia were represented. The conclusion seems justified that the Workshop had a proportionate balance to meet the premise for which it was called.

Honest evaluation of the recommendations of the Workshop points out that a study during a brief four-day period cannot hope to suggest all the solutions. This must be a continuous study of trial and error. The first few designs cannot solve the problem at the hour, nor in the venturous and traumatic time ahead. This study must be ceaseless, it must be corrected, it must be adjusted, and it must be adapted.

Nine essayists presented papers during the general sessions, and five study groups were assembled. The participants discussed the scope, urgency, and need for reorientation of practice methods. They realized that the profession has a commitment to the public to supply high quality, comprehensive dental care. They recognized that in order to honor this commitment there is a need to devise and recommend for the consideration of the profession, dynamic methods for a reorientation of the traditional pattern of dental practice, teaching, research, and learning.

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Dr. Simmons is Chairman of the Committee on Social Characteristics of the American College of Dentists; this was the Planning Committee for the Workshop.

They appreciated fully that if we really believe in the value and necessity of optimum dental health, if we really believe in preventive dentistry, if we really believe in continuing education, and if we really believe that all must have access to dental care, then we must adjust, adopt, endorse, support, and develop our professional methodology to the point where we can meet the dental needs of the future.

The charges given us are not easy for a profession to accept. The very nature of our practice is opposed to the status quo being disturbed. The singular, traditionally independent type of practice will naturally resist, if but for a while, alteration of a way of life. But the needs of the past have been met in a most worthwhile manner, and there is every reason to believe that we dentists of today, in all areas of the profession, whether in private practice, education, administration, research, or communications, are the key individuals to the solution of the dental health problems of the 1970s.

We must reorient our thinking, scrutinize our methods, and institute desirable change to achieve a unified concept and way of providing the best dental health service possible to each citizen of the United States.

The willingness, the knowledge, and the facilities to do this can be ours. The only major obstacle will be our reluctance to face change, and adjust to it. The recommendations that have resulted from this Workshop indicate that we will hurdle that obstacle.

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## *The Objectives of the American College of Dentists*

The American College of Dentists, in order to promote the highest ideals in dental 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 development and use of measures for the control and prevention of oral disorders;

(b) To urge broad preparation for such a career at all educational levels;

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

(d) To encourage, stimulate, and promote research;

(e) To encourage qualified persons to consider a career in dentistry so that the public may be assured of the availability of dental health services now and in the future;

(f) To improve the public understanding and appreciation of oral health service and its importance to the optimum health of the patient through sound public dental health education;

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

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

(i) To urge upon the professional man the recognition of his responsibilities in the community as a citizen as well as a contributor in the field of health service;

(j) In order to give encouragement to individuals to further these objectives, and to recognize meritorious achievements and potentials for contributions in dental science, art, education, literature, human relations and other areas that contribute to the human welfare and the promotion of these objectives—by conferring Fellowship in the College on such persons properly selected to receive such honor.

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This is from the Preamble to the Constitution and Bylaws of the American College of Dentists.

