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History of Naval Dentistry*

REAR ADMIRAL R. W. TAYLOR, D.C.

United States Navy

LIKE THE LEGENDARY tortoise, naval dentistry started slowly, but has been eminently successful in achieving its goal.

From the inception of the Navy in 1775, when the Continental Congress authorized the building of thirteen ships, until about seventy years later, there seems to have been little concern for the requirements of naval personnel for dental care.

Since the records reveal that dentistry in the military services started as an outgrowth of military medicine, it is necessary to look back on the development of the Medical Department of the Navy to find the origin of naval dentistry. In the earliest days, each ship acted more or less independently under a roving commission, and there was no formal medical department in either individual ships or the Navy as a whole. It was left to each commanding officer to augment his ship's company with the necessary medical personnel, which included usually the ship's surgeon, surgeon's mate, and loblolly boy.

Within the first few decades after establishment of the Navy, Congress authorized the appointment and commissioning of medical officers in the same manner as other officers, and permitted their assignment to ships and naval stations. It was not until February 26, 1811, that naval hospitals were authorized by Congress, although one had been established in Sicily in 1806, and another in New Orleans in 1810.

Many of the early problems of the medical department resulted from lack of central authority for the handling of medical matters. Typical of this situation was the unsatisfactory arrangement by which fleet medical procurement was concentrated in New York, while other medical matters were dealt with by the Medical Officer of the Navy Yard in Washington. More effective handling of personnel and administrative problems became possible after the founding of the Bureau of Medicine and Surgery, and appointment of Surgeon W. P. C. Barton as its Chief in 1842.

* Presented at the Annual Session of the American Academy of the History of Dentistry, Dallas, Texas, November 7, 1958.

As mentioned previously, there was little attention given to the dental problems of naval personnel throughout this entire period. Any measures taken for the relief of dental pain stemmed from the limited knowledge and skills of the medical department personnel. It was not until about 1845 that the first staunch advocate of military dentistry appeared—in the person of Dr. Edward Maynard, a practicing dentist of Washington, D. C. Although the reaction to Dr. Maynard's ideas was generally apathetic, he obtained strong support from President Fillmore. Maynard's proposals so impressed Fillmore that he took them before his cabinet for consideration. These cabinet discussions resulted in only meager unfruitful action by the Secretaries of War and the Navy, however, Maynard was not dissuaded from continuing his attempts for the establishment of a dental service for personnel of the military services.

Examples of the difficulties encountered, together with indications of limited progress, are expressed in exchanges of correspondence between the Secretary of the Navy and the Chief of the Bureau of Medicine and Surgery of the Navy in 1853.

On February 16, of that year, the Secretary of the Navy informed the Chief of the Bureau of Medicine and Surgery, Dr. T. Harris, that "The President has expressed a wish that this department would inquire into the propriety of enlarging the requisitions upon Candidates for admission into the Medical Corps, so far as to demand from them a more full knowledge of the science and practice of Dentistry in preparing them for the duties of the Naval Service.

"I will be obliged to the Bureau under your control for a report, which shall state what studies in dentistry are now embraced with the general requisitions of the Bureau, and the expression of your opinion upon the value of necessity of enlarging the studies of the Medical Officers."

In his reply of February 21, 1853, the Chief of the Bureau said, "With regards to the studies in dentistry now required, I would state that they extend merely to the physiology and pathology of the teeth, and to the practice of such operations on the same, as may be considered essential to the health and comfort of the officers and men on shipboard.

"As to the necessity or propriety of enlarging the studies of Medical Officers, so as to embrace anything like a complete and practical knowledge of the nicer manipulations of dentistry. I have no hesi-

tation in expressing the conviction, that it is altogether impracticable without a neglect of other and much more important branches of their profession.

"Dentistry is regarded as an art separate and distinct from the profession of Medicine, and one requiring a manual dexterity which can only be acquired by long and extensive practice.

"I believe all that is essential to the health and comfort of the sailor, in this regard, is now taught and understood by the Medical Officer, and that to enlarge the scope of his studies so as to embrace the art of dentistry, as now understood, would, so far from adding to, materially detract from the usefulness and efficiency of the Medical Corps. I would add that the instruments and appliances, necessary to the practice on board ship, could involve a large additional expense in the medical outfit of vessels."

To satisfy the President's desire for additional information, the Secretary of the Navy requested, on February 24, 1853, that the Bureau Chief "... furnish a further report of the extent of dental science, considered by you as necessary to the Medical Officers of the Navy, to enable them to practice such operations as may be essential to the health and comfort of the officers and men of the Navy on shipboard, and also to state, whether in view of the limited extent of the practical knowledge of the nicer manipulations of dentistry, acquired by the Medical Officers of the Navy, it is not essential to the health and comfort of the officers and men of the Navy, that there should be a skillful Dentist attached to each of the vessels of the Navy or at least one to each squadron.

In response, on February 25, 1853, the Chief of the Bureau of Medicine and Surgery stated, "... the Medical Officers of the Navy are required to inform themselves in regard to the anatomy of the teeth, and the surgical treatment of the diseases and injuries to which they are subject: ... they must understand the different methods adopted for the relief of pain; the best modes of extraction; the causes and treatment of disorders connected with dentition; the same in regard to the exfoliation of the alveolar processes, and the treatment of abscesses, etc., in that region."

The Chief of the Bureau conceded, "It would no doubt conduce much to the comfort and convenience of a vessel to have an experienced dentist, but I would state it as my opinion, that one for each Squadron would be amply sufficient."

Dentistry's steady growth as a profession is indicated in the observations and recommendation of the Chief of the Bureau of Medicine and Surgery in his annual report for the fiscal year ended June 30, 1870. The Bureau Chief stated, "The art of dentistry is one requiring, in addition to general scientific knowledge, a mechanical skill and dexterity only to be acquired by the constant practice and undivided attention; hence it, as is well known, has become a specialty outside the profession of medicine. Considering the great suffering and the irrecoverable injuries which arise from neglect of, or badly treated, teeth, especially during the ages embraced by the period of pupilage at the Naval Academy, injury often diminishing future usefulness and efficiency, it is respectfully suggested that an experienced and skilled dentist be added to the permanent officers of that institution." As we shall see later, this recommendation encountered a thirteen year delay before being effected.

In the meanwhile, it is apparent that the dental condition of naval personnel was subject to surprisingly close scrutiny and that at least some sort of dental standards were being applied for entrance into the Navy. This is pointed out in the Annual Report of the Surgeon General for calendar year 1879, as follows: "From the great care in the physical examination of men for the service, diseases of the teeth are few, there were reported only 2.93 per M of which 0.22 per M were invalided." (Statistics for that year included Odontalgia—25 cases, Loss of teeth—1 case.)

In consonance with the Surgeon General's comments regarding the relative freedom of naval personnel from dental disease, the same report contained the following observation of Surgeon J. S. Knight, of the USS MICHIGAN, regarding the physical condition of men being recruited on the upper Great Lakes: "... The number rejected in proportion to the number of applicants is greater than I supposed it would be in boys from 15 to 18 years of age. ... The most prominent physical defects met with were variocoele, retarded development, defective eyesight, and bad teeth, in the order mentioned." Knight then philosophized, "May not the great number in the cities who are are physically disqualified, as compared with those in the country, be caused by the more irregular and immoral habits of the former, as well as less wholesome food, bad ventilation of the sleeping apartments of many, and also the less salubrious atmosphere of the cities as compared with that of the country?"

Throughout the Civil War and for about 18 years thereafter, the lack of formal provisions for the employment of dentists or dental personnel in the Navy persisted. However, a limited number of hospital stewards with varying degrees of training in dentistry were enlisted into the Navy during this time to provide dental care. These men did not usually remain in the service beyond their original enlistments because of the lack of opportunities for training and advancement.

The earliest appropriation in the Navy which was intended specifically for dental care was authorized by Congress in 1883. At that time \$1,600 was allotted for the employment of a civilian dentist at the U. S. Naval Academy. The first dentist to fill this assignment was Dr. H. Walton, who had the same status as the civilian instructors. He served until 1899 when he was replaced by Dr. Richard Grady.

Shortly after the Spanish-American War, Surgeon General Rixey, who had been White House physician and one of the doctors who attended President McKinley when he was fatally wounded, was instrumental in effecting many improvements in medical services. Among his endeavors, Rixey sought to have a dental service provided for the Navy. However, a bill to this effect was not considered by the Congress in 1902, although the Army had been authorized to employ contract dentists through legislation the previous year.

The requirements for dental care had been somewhat alleviated at the Naval Academy with the appointment of a civilian dentist, but the Surgeon General's report of 1903 expressed concern for the unsatisfactory conditions which existed Navy-wide in regard to this health service. The report states: "At present, dentistry is provided at the training station, Newport, on the receiving ship COLUMBIA, at the Naval Academy, and at the naval station, Island of Guam, and arrangements are being made for similar service on the receiving ships WABASH and FRANKLIN and the training station, San Francisco. Hospital stewards who have training and experience in dentistry are assigned to these stations, with the exception of the Naval Academy, for which place Congress has provided for the employment of a dentist. This arrangement, while answering in a measure to the demands for work of this character, is not satisfactory to the Bureau and is neither just to the men nor pleasing to the dental profession. Congressional action, therefore, is again requested for authority to appoint under contract regularly graduated dentists, who shall be

examined and selected under the direction of the Bureau of Medicine and Surgery and assigned to duty at the continental limits of the United States."

Authority had not been granted to appoint contract dentists throughout the Navy, but about 1904 Dr. E. E. Harris became the first graduate of a dental school to be enlisted as a hospital steward. Dentists of this category, who received grossly inadequate pay, in many instances enlisted for travel opportunities without any expectation of remaining beyond their first enlistment.

Comments of the two fleet surgeons gave evidence in 1910 of an increasing awareness of the needs and value of dental care. The Fleet Surgeon of the Pacific Fleet reported: "Much dental work has been done on the ships of the squadron. For example, on the TENNESSEE from April 22 to August 28, 1909, 282 teeth were crowned and bridged, 180 devitalized, and 27 extracted; there were 219 gold fillings, 412 amalgam fillings, and 67 cement fillings. This work cost the crew \$2,960 and represents only a part of what was desired, as a dentist could have been kept very busy for an additional number of months, but was unable to continue owing to the departure of the ship. The necessity of dental work on ships has long been recognized, and it is the opinion that the more closely this question is examined the more apparent the necessity becomes."

Also in 1910, the Fleet Surgeon of the Asiatic Fleet discussed the dental situation as follows: "The need of a dental surgeon at Olongapo and in the squadron is urgent. At the former place the hospital steward attached to the RELIEF did good work, but his enlistment having expired he was transferred to the United States, and should be replaced by another. The large number of officers and their families, the large enlisted force, the remoteness of this station render the necessity for a dentist self-evident. Before starting on the summer cruise a civilian dentist in Cavite was given permission to accompany the squadron. He was attached to the flagship, was quartered and messed with the junior officers, a convenient working place was assigned him on the gun deck, and he did excellent work. After the return of the squadron to Cavite the permission granted him was extended, and after the flagship left for Yokohama he went on board other ships remaining at Cavite, to complete necessary work.

"His presence on board ship obviated the necessity of special arrangements for sending men ashore, special-money requisitions,

solved the problem of classed men, reduced interference with ship's work and drills to a minimum, and induced many men to obtain dental aid who otherwise would not have done so."

A picture of the status of dental care, as it existed in the Navy four years prior to the establishment of the Dental Corps in 1912, was presented by Dr. Richard Grady, the Naval Academy dentist, to members of the Northeastern Dental Society as follows:

"Government ships are provided with dental cases, each containing a set of forceps, elevators, evacuators, engine burs, plastic filling instruments, and high grade gutta-percha. These are used by the surgeons and hospital stewards, some of whom have taken courses in dentistry. Practically there is no room on ships for dental work, for chair, cabinet, engine, etc. If located in or near the 'sick-bay,' as the hospital is termed on a man-of-war, the dentist could work on bright days only. As to living quarters there might be trouble.

"Recognizing that the equipment of the general surgeon is not wholly adequate to relieve the diseases incident to the mouth, teeth, and jaws, the Navy, having no dental corps, as you know, Surgeon General Rixey has provided a course of lectures in the Naval Medical School in Washington for the officers of the Medical Corps of the Navy. These are on elementary dentistry and instruction in the treatment of ordinary dental troubles, including relief from suffering, the insertion of temporary fillings to protect teeth from further decay until a favorable opportunity can be secured for permanent work, and the extraction of teeth."

As a culmination of the many previous recommendations and actions, President Taft signed an Act of Congress, on August 22, 1912, which authorized the appointment of not more than thirty assistant dental surgeons to be part of the Medical Department of the Navy. Officers so appointed were limited to the rank of lieutenant (junior grade). The Act also authorized the Secretary of the Navy to appoint acting dental surgeons for temporary service, when necessary to the health and efficiency of personnel of the Naval Service, provided that the total strength of the dental corps should not exceed the proportion of one to each thousand of the authorized enlisted strength of the Navy and Marine Corps.

Development of a true Navy-wide dental service began in November 1912 with the appointment of Dr. Emory A. Bryant and Dr. William L. Cogan as acting assistant surgeons, for temporary service.

They were appointed for the purpose of conducting professional examinations and establishing a Dental Service in the Navy.

The next step in the development of the Navy Dental Corps came with the passage of legislation on August 29, 1916, which authorized the appointment and commissioning of dental surgeons at the rate of one to each one thousand of the authorized enlisted strength of the Navy and Marine Corps. The Act specified that these officers should constitute the Dental Corps of the Navy. Previously, dental officers had been designated "M.C.D.S.," an abbreviation of Medical Corps Dental Surgeon, but after passage of the Act, the abbreviation "D.C." was adopted to designate Dental Corps. The 1916 legislation also provided for the promotion of eligible dental surgeons to the grades of lieutenant and lieutenant commander on a parity with officers of the Medical Corps.

Further legislation, the Act of July 1, 1918, authorized dental officers to receive the pay and allowances of commander and captain, although they were not authorized to be advanced to those grades.

Within five years of its inception, and before the Dental Corps could have been expected to reach maturity, the advent of World War I necessitated rapid expansion of the Corps from 30 dental officers at the outbreak of hostilities to a peak of over 500 in 1918. In spite of its youth and lack of experience, the Corps established an enviable record for its accomplishments ashore and at sea during the period of conflict.

As unfortunate evidence of the activities of dental officers during the war, the first commissioned officer of the United States Navy to meet his death in land fighting overseas was Lieutenant (junior grade) Weeden C. Osborne, DC, USN. He was killed in action on June 6, 1918 near Bois De Belleau, France, while carrying a wounded officer to a place of safety. Lieutenant Osborne was honored posthumously through the award of the Congressional Medal of Honor and the Distinguished Service Cross for "intrepidity and extraordinary heroism in actual conflict with the enemy." Later, the first naval vessel to be named to commemorate a dental officer was christened the USS OSBORNE.

Outstanding recognition for heroism and devotion to duty was shown other dental officers. Among these was the late Vice Admiral Alexander G. Lyle, Dental Corps, U. S. Navy, who was awarded the Medal of Honor and cited twice for the Army Silver Star Medal. Also

honored was the late Rear Admiral Cornelius H. Mack, Dental Corps, U. S. Navy, who was awarded the Navy Cross and cited five times for the Army Silver Star Medal, in addition to being awarded the Croix de Guerre, Gold Star, from the French Government.

The dental corps grew rapidly in stature and gained much recognition in the decade following World War I. The Surgeon General, in his report in 1919, attested to the great value of the work accomplished by officers of the dental corps by stating, "Few remedial measures of recent years have given more satisfaction to enlisted men than the establishment of this corps."

During the following year, previous restrictions were removed and dental officers were authorized to broaden the scope of dental care by rendering dental prosthetic treatment. Soon thereafter, dental prosthetic laboratories were established in some of the ships and at the larger shore facilities.

It became increasingly apparent that, if a high level of dental service were to be maintained, some means must be provided for dental officers to keep abreast of advances in the theory and practice of dentistry. This need was first met through the establishment of the Navy Dental School as a department of the U. S. Naval Medical School in Washington, D. C. The Dental School opened on February 3, 1923, to provide postgraduate training for dental officers and to train men of the Hospital Corps to serve as dental assistants.

Another important event of 1923 was the establishment of a Dental Division within the Bureau of Medicine and Surgery, with a dental officer in charge. Under the direction of the Surgeon General, this Division had cognizance of all dental affairs of the Navy and all technical activities pertaining to the Dental Service, including personnel, material, and inspections.

It was gratifying to note the Surgeon General's report of 1924 the observation that "Today it is generally recognized that dental service is an important factor in the conservation of bodily health and that the physical and mental well-being of an individual are in a decidedly large degree dependent upon a healthy condition of the mouth." This is in described contrast with the views of the Surgeon General of 1853 who felt that all that was essential to the dental health and comfort of the sailor was then understood and practiced by the medical officer.

Inequities in the promotion of staff officers of the Navy were re-

moved with passage of the Staff Corps Equalization Bill on 10 June 1926. This Bill provided that all staff corps officers be granted promotions equal to those of line officers and further provided that officers of the Dental Corps be eligible for promotion up to and including the rank of captain. Additional prestige and administrative independence for the Corps came in 1927 when provision was made for one of the eight professional services of a naval hospital to be a dental service, with the dental officer enjoying the status of chief of service.

The broadening awareness of the benefits of dental care to the individual and to the Navy was accompanied by greatly increased demands for this health service. Alleviation of the situation was sought for a number of years, but it was not until July 22, 1935, that an Act of Congress authorized the long needed relief. The Act provided for the appointment of dental officers in the ratio of one for each 500 of the actual number of officers and enlisted men of the Navy and Marine Corps. The change in ratio seemed to indicate that the Dental Corps would be doubled in size, however, this was not the case. The number of dental officers to be appointed under the new Act was based on the actual strength of the Navy and Marine Corps, in contrast to the previous provision for their appointment on the basis of one to each 1,000 of the authorized strength of the Navy and Marine Corps. Because the actual strength had previously been considerably below the authorized strength, the immediate effect of the Act was to increase the allowed number of dental officers from 186 to 234 officers.

Coincidental with the appointment of additional dental officers, it became necessary to seek means of increasing three aspects of training. These included the initial indoctrination of newly commissioned dental officers, more adequate postgraduate training for mature dental officers, and improved training of dental technicians. The problem was met through the establishment, on March 17, 1936, of the U. S. Naval Dental School as part of the newly established Naval Medical Center at Washington, D. C. A dental officer received orders to serve as Commanding Officer of the Dental School, thus this activity became the first one to be commanded by a dental officer. The Dental School remained in Washington, until February 1942, when it relocated in new and larger facilities, as a component command of the National Naval Medical Center, Bethesda, Maryland.

World War II brought about the greatest expansion which the Dental Corps had ever experienced, and the number of dental officers on active duty rose to a peak of over 7,000. In the accomplishment of their military and professional duties, 21 of these officers lost their lives, 16 were wounded in action, and 14 were prisoners of war. As in World War I, many honors were bestowed upon heroes of the Dental Corps. These honors ranged from the awarding of the Purple Heart for battle injuries, to the naming of three naval vessels, the USS CROWLEY, the USS TATUM, and the USS O'REILLY, for deceased dental officers.

The magnitude of the dental care problem in the Navy is revealed in Dental Service Reports covering the period of hostilities. During that time approximately 30 million restorations were inserted, 4.2 million teeth were extracted, 8.2 thousand fractures were reduced, a half-million dentures and bridges were constructed, and eleven hundred ocular prostheses were fabricated. At many stations it was necessary to operate on a "shift" system to make maximum use of the available dental facilities.

Administration of the greatly expanded dental organization was handicapped initially by the limited Dental Corps organization in the Bureau of Medicine and Surgery, and by lack of representation at naval district and staff levels. A major factor in improving this condition was the Act of December 17, 1942, which authorized the appointment of an officer of the Dental Corps to the rank of rear admiral.

The year 1943 has particular significance to the Dental Corps from a professional standpoint. Early in World War II, it was found that the failure of young men to meet the prevailing dental standards was the greatest cause for rejection of a prohibitive number who were otherwise fit for induction into the Navy and Marine Corps. This situation forced the almost complete elimination of dental standards for enlisted personnel and resulted in an overwhelming increase in the requirements for dental care. No provision was made for a compensatory increase in the number of dental officers to cope with the tremendous workload which ensued.

As part of a plan to improve the operational and administrative aspects of the Navy-wide dental program, the dental functions in the Bureau of Medicine and Surgery were completely reorganized in 1945 and an office of Assistant Chief of the Bureau for Dentistry was

established. Although this reorganization placed a dental officer as the functional head for dentistry, it did not provide the necessary administrative authority to permit dental personnel of ships and stations to most effectively carry out their dental mission. As a corrective measure, the Act of 28 December 1945 contained a requirement that all dental functions of the Bureau of Medicine and Surgery be placed under the direction of the Dental Division and that an officer of the Dental Corps, in the grade of rear admiral be detailed as the Chief of the Dental Division.

As administrative problems were met, it became possible to concentrate greater attention on improvement of the professional level of dental care. This is a continuing objective of the Dental Corps which is accomplished principally through various training programs for dental officers and enlisted personnel. The greatest professional requirement of Navy dental officers is to render treatment in general dentistry. Training in this field is provided through rotating internships, postgraduate courses at the U. S. Navy Dental School, and various short postgraduate courses. The second major need is for officers, already well trained in general dentistry, to teach, conduct research and provide specialized treatment in such fields as oral surgery, prosthodontics, and periodontics. Training to meet this need is provided through postgraduate training at civilian dental schools and by postgraduate and residency training within the Navy. At the present time there are 55 Navy dental officers who have achieved a sufficient level of training and proficiency to merit certification by the various dental specialty boards.

Although all of the advanced professional training of Dental Corps officers in the Navy is under the cognizance and supervision of dental officers who are diplomates of specialty boards, civilian consultants are appointed also to assist in these programs. Thirty-seven civilian consultants are so employed at the present time.

Basic training of enlisted personnel to assist dental officers in dental operating room and prosthetic laboratory procedures is accomplished through courses conducted at the U. S. Naval Training Center, San Diego, California. Advanced training for general and prosthetic dental technicians is provided at the U. S. Naval Dental School, Bethesda, Maryland. This school also trains dental technicians in procedures for the repair and maintenance of dental equipment.

It is difficult to say exactly when dental research began in the

Navy because, in the early days of the Dental Corps, the occasional clinical investigations which were conducted were carried on without formal authorization. However, the year 1942 stands out as a definite point of reference, because it was in that year that the Research Division was established in the Bureau of Medicine and Surgery, and the Dental Department was established in the Naval Medical Research Institute at the National Naval Medical Center, Bethesda, Maryland. Since then, there has been a constant pursuit of officially approved dental investigations within the Navy.

Two separate aspects of dental research are sponsored by the Navy today: 1) a program conducted within the laboratories and clinical facilities of the Navy itself; and 2) a program conducted by universities through support of the Office of Naval Research. Supervision of both of these phases of research is accomplished by the Dental Corps through the assignment of a dental officer to the appropriate administrative offices.

No accurate dollar value can be placed on the intramural dental research efforts of the Navy, but support given to civilian institutions has averaged well over one hundred thousand dollars annually for the past eleven years. The research projects supported include basic science, clinical research and materials development.

The objectives of the Navy's dental research programs are to determine the causes and means of eliminating oral disease, to refine clinical and laboratory procedures, and to develop better materials and equipment.

The latest major problem in naval dental treatment requirements came when the Dependents' Medical Care Act, Public Law 569, became effective on December 6, 1956. On that date approximately 130,000 Navy dependents overseas and in remote areas of the United States were made eligible for routine dental care. Thus, for the second time in its history, the dental clinics became deluged with demands for dental care without authority for compensatory increases in dental personnel. In spite of these difficulties, approximately eight million diagnostic and treatment procedures were accomplished at 450 dental facilities ashore and afloat last year.

CONCLUSION

Without the vision and determination of the early advocates of naval dentistry, the inception of the Dental Corps would have been long delayed. Similarly, growth of the young organization would

have been less rapid if it had not been for the help of sympathetic members of the Congress, medical and line officers, the assistance of civilian dentists and the American Dental Association, and the loyalty and determination of devoted dental officers.

The early goals, which focused on the establishment and administration of a high type of Navy-wide dental service, have been achieved. They are now a part of the history of the Navy Dental Corps. However, we have new goals and broader horizons—to further improve the calibre of dental care for service personnel and their eligible dependents, and to contribute our share to the progressive improvement of dentistry and the dental profession.

The opinions or assertions contained in this article are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

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Responsibilities in Preventive and Control Measures in Dental Health Service

Involvements of a Preventive Program in Dentistry

Dorothea F. Radusch, Minneapolis, Minn.

The Dentist's Responsibilities

Rupert H. Gillespie, D.D.S., West Palm Beach, Fla.

The Teaching Institution's Responsibilities

Robert E. DeRevere, D.D.S., Philadelphia, Pa.

The Patient's Responsibilities

Carl J. Stark, D.D.S., Cleveland, Ohio

The Profession's Responsibilities

Alva S. Appleby, D.M.D., Skowhegan, Maine

Preventive Aspects of Dental Health Service

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Involvements of a Preventive Program in Dentistry

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AS ITS CONTRIBUTION to the theme of this meeting, members of the Committee on Preventive Service have prepared a workshop in miniature. It is hoped that this presentation may stimulate some of the Sections of the College to undertake a one-day study program on the vital subject of control and preventive services in dentistry.

We wish to project to you the objectives of the committee and to present ideas for their implementation. Because members of the committee believe that the prime purpose of dentistry should be retention of natural teeth and not their replacement, it is the opinion that the preventive program is a major one. Oral structures will be conserved and optimal oral health maintained only if the profession is alert to the necessity of stressing and applying the many measures of prevention and control which are available. We believe in an all inclusive program.

The committee is concerned over pilot study reports that the dentists interviewed said that they prefer to do restorative work. Even so, 56 per cent said they spend as much time on preventive

dentistry as they "would like to" and that they emphasize preventive measures to the patient, but they believe that the average dentist spends too little time on control and prevention, or patient education. On the other hand, the interviewed public said that dentists are more closely associated with final stages of dental problems than with preventive measures, that dentists fix teeth that are already painful, decayed or need to be extracted and that "dental care" is synonymous with "brushing."

Such survey results bring us to the questions: Has the dental profession used efficient methods in its promotion to the public of preventive dentistry? Does the dental profession make enough effort to inform the general public or should it depend primarily on the individual dentist to educate only those who seek dental services? Do we as dentists need to present preventive dentistry in a more meaningful or more actively motivating manner? Do we recognize that different types of communication are required for different segments of the population? Has dentistry given enough consistent attention to promotion of all phases of preventive dentistry? Are enough dentists truly aware of the potentials of preventive dentistry? Who must share the responsibilities if the full value of control and preventive measures are to be attained?

After my return from the March 1958 committee meeting, I read Dr. Brauer's report in relation to dental manpower in the March *Journal of the American Dental Association* (J.A.D.A. 56:389, March 1958). Dr. Brauer made statements on prevention and control so similar to the aspects brought out in the committee discussion that I shall quote a portion:

"It seems important for the profession again to re-evaluate its basic philosophy relating to the reasons for its existence, the patterned objectives as expressed in everyday practice and the programs and broad operational policies. . . . What emphasis, if any are the leaders and planners in the profession ready to place on prevention, which would reduce the need or requirement for dentists? I have been led to believe by the scientific literature and research experiences that dental caries and periodontal disease can be prevented or controlled in a large percentage of the population, provided the people were willing to follow the recommendations of known preventive measures. Has the profession been a failure in "selling" the public and themselves on preventive dentistry, and is it a part of the basic planning to continue to admit failure? . . . What type of dental product (graduate) is dental education producing with respect to knowledge, know-how and basic philosophy regarding prevention. Does the average student really know how to prevent or control dental caries from a practical everyday-practice point of view, or does the average graduate have the

basic idea that preventive dentistry is something fine to talk about—but “let’s get on with the show and do the fillings and other restorations?” Does the average student know how to manage the various periodontal problems, or is this work to be delegated to the few available specialists? Does the average state board have any practical measure of a candidate’s fitness to practice preventive dentistry?

Perhaps preventive dentistry is a fine thing to talk about but not a practical expedient for every day practice. If preventive dentistry is important, if it is practical, if the objective in the professions is to do more than emphasize only restorative procedures and if the profession is planning to do something about the manpower problem, not by producing more dentists to do restorations, then the basic philosophy of dental education and state board examinations must be re-evaluated from this point of view. If preventive dentistry has no practical value in reducing the manpower needs and if preventive dentistry is not to be used as a basic weapon in solving the manpower problem, the future of the profession appears dismal indeed.”

The Committee also approaches the preventive program from a somewhat different premise than manpower needs. We emphasize the preventive program because of our opinion that it is a major factor if the natural teeth are to be conserved. Furthermore we believe that prevention and control cannot be limited to one area such as fluoridation. We believe that responsibilities for the wide effort which is necessary involves the dentist, the teaching institution, the patient and the profession. The following papers will project some of these responsibilities as we see them.

The Dentist's Responsibility in Prevention and Control Measures

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THE PRIME REQUISITE for an individual to assume any responsibility is the possession of sufficient knowledge of the subject assigned, the ability to organize and direct, and a determination

to attain results. It is with these qualifications that man has advanced civilization to its present status with hopes of greater achievements in the future.

With his professional education and training, the dentist possesses a superior knowledge as well as a firm understanding in all aspects of Dental Health. His chosen life work gives him the interest as a member of his profession. He is and should be the motivating influence in all dental science advancement. It might well be said that indirectly, only through the individual dentist can prevention and control of abnormal conditions of the oral structure be accomplished.

Basically the responsibility of the dentist can be divided into two categories, first in relation to the profession with scientific and clinical experimentation, and second, in relation to the patient with practical and educational methods. This discussion will be confined to the latter.

Basing his information on the results of past scientific and clinical findings, and the firm realization of his obligation as a dentist, it should be each dentist's desire and his duty to convey to his patient and to the public, the accepted and proven measures which will insure better Dental Health.

It is not the purpose of this discussion to enter into techniques or methods, but rather to bring to light many measures we so thoughtlessly overlook in our routine practice which are of untold value in the prevention and control of abnormalities of the oral structure, many of which the patient is unaware and uninformed.

Health, comfort, and esthetics are paramount to the patient and to

attain these only the dentist can instruct, prescribe and direct. Having gained the confidence and cooperation of the patient the opportunity is at hand with each consultation and chairside discussion.

The field covered by Dental Health service includes not only the teeth and their supporting structure, the soft tissues and the visual mouth conditions, but the formation nutrition and the physical elements associated with the existing mouth conditions. Each part of the field deserves equal consideration. A great responsibility is placed upon the dentist in his examination for it is at that time that the prevention and control is initiated. An incomplete examination may result in a complete failure of the desired results.

Bacterial invasion can flourish only in a septic field, and with this in mind sterilization and prophylactic treatments have been administered since the isolation of the microorganism. Unquestionably the emphasis placed upon prophylactic methods and proper oral hygiene procedure is most contributory in the prevention and the control of the majority of mouth disorders. Continued education of the public by the profession as to scientific methods should be encouraged, thereby combatting many commercial procedures, some of which could be detrimental.

The past few decades have accomplished much in caries control and it is the responsibility of the dentist to utilize the many accepted methods. Undoubtedly one of the greatest advancements is fluoride therapy; in the prenatal and early childhood years through the water supply and in the post-natal by the topical application. Clinical endorsements as well as experimental community checks which have been made, certainly warrant every practicing dentist promoting and advocating further fluoridation. May the future generations look back at us as the forerunners in this measure.

Nutrition and diet have long been known as contributory factors in dental disorders and should be given more serious consideration in diagnosis and treatment. The lactobacilli count might well be as necessary in mouths of rampant caries as the blood count is in many systemic diseases.

Antibiotic and antienzyme therapy as well as vitamin administration may constitute greater preventive measures in the future and deserve most serious study. The possibility of a re-mineralization to prevent the continuance of damaged enamel likewise appears as a challenge.

The x-ray is one of the most effective means for detecting obscure dental conditions. Its use is of unequaled importance in control measures. Only the x-ray can reveal hidden abnormalities, most of which might still be in a corrective stage. Dental x-rays, properly used, produce negligible radiation effects. The education of the patient and the public regarding the over-publicized possibility of radiation effects in dental use should be the duty of every dentist.

The value and the importance of proper restorations to the damaged condition can never be overstressed. This might be considered the dentist's greatest preventive measure. Nowhere can the Golden Rule be applied more concretely in dentistry than in restorative treatment. The concept of the purpose of each restoration should be understood by the patient not as a repair but as a control.

A great responsibility is placed upon the dentist in periodontal care. It is the early diagnosis of the diseased condition, the contributory factors causing the condition and the necessity for immediate treatment, which may prevent the cause of the greatest loss of human teeth. Too often the patient is uninformed as to the future possibilities.

The services of auxiliary personnel in the office may well be an indirect factor in patient cooperation. The notification of the periodic examination, the implication of a personal interest and the manner in which the patient is received all create a desire on the part of the patient for better dental health.

It would be impossible to enumerate the many other important factors which could be associated with prevention and control measures whereby the individual dentist would be fulfilling his obligation toward the future dental health program. With the rapidly increasing population more serious consideration must be given to all measures which might alleviate the demands upon the dental profession.

Upon each of us as a practicing dentist a responsibility has been placed, the care of the oral structures of our fellow men. Our profession has performed a most creditable task for more than a century. We have advanced in equal proportion to all other fields of medical sciences. May we have an inspiration for greater accomplishments in the field of Prevention and Control of Dental Health.

Responsibilities of the Dental Schools in Prevention and Control of Dental Disease

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THE BASIC PHILOSOPHY of dental education in most dental schools thirty or forty years ago, was to develop students who excelled in the removal, replacement or restoration of the tooth. The extraction, prosthetic and operative departments were the most important in the dental curriculum and the student was evaluated on the degree of technical skill which he was able to demonstrate. Slowly but surely the goal of dentistry and dental education shifted from detection, recognition and treatment of pathology to prevention of the pathology.

The rate of development of this trend was dependent upon the infiltration of recent graduates into responsible teaching positions and an adjustment in the teaching philosophies of some of the veteran dental teachers particularly in the technical and clinical areas. The climax of the prevention trend in dentistry will take several generations of dental educators and students and then another generation or two of patients before it becomes common practice instead of the exception.

The student today is comparatively well oriented in the sciences basic to dentistry and is beginning to recognize that dental research is as much his responsibility as it is dental educators or research specialists. Research is the foundation of any program in prevention and control of dental disease. Students are expected to and do participate in research as part of their educational program. More and

more philanthropic and governmental organizations are furnishing grants to students or schools to develop and perpetuate this interest in research. At this stage in the student's education, the research problem is not so important as is the development of the inquisitive and scientific mind and the know-how and means to pursue a problem.

An attempt is being made to develop a better respect for pre-clinical sciences. A student better versed in the sciences will be a better researcher, a better clinician and above all, foster a keener interest and better capacity to practice preventive dentistry. The integration of basic science studies with clinical teaching is an overdiscussed and thorny problem to which dental schools have given a great deal of attention. One approach has been the development of the so-called vertical curriculum in which the student no longer takes two years of basic science and technic courses, then two years of clinical experience but now enters the clinic as early as the first year in some schools and continues to receive basic science courses until the fourth year.

There is no question that prevention and control of dental disease should be the major goal of dentistry and the philosophy of dental education but just how this philosophy should be put into practice and the results evaluated by the dental student is a point of contention. Should it be taught as a separate course? Should it be included in a course in public health dentistry or dentistry for children? Or, should it permeate throughout the dental curriculum with each course assuming its respective share of the responsibility for its inception? This discussion is intended to show that teachers in all phases of dental education must shoulder the responsibility for motivating and instructing the student in the procedures known today and prepare him for ready use of procedures that will be developed in the future.

The backlog of American dental needs would require the services of 250,000 dentists working for ten years. Once these needs are eliminated, it would require 170,000 dentists to maintain dental care on the established level of dental health.¹ Obviously, dental manpower cannot begin to treat this backlog of dental needs even if patients sought it. Encouraging these people to seek dental care is another problem. The only practical and realistic way to reduce the backlog of adult dental needs for the future is to prevent the

development of the dental needs in the child today. As the saying goes, "Little can be accomplished for grown-up people, the intelligent man begins with the child."—(Goethe)

Thus, dentistry for children is the most logical area to incorporate the principles of prevention, but here again, the student comes to regard prevention as something solely for the child. Statistically, this may be where it will do the most good but realistically, the profession's responsibility for the adult is not to be ignored. Assigning preventive dentistry to pedodontics loses this concept to the rest of the dental curriculum. After all, there is a certain amount of prevention to be practiced in geriodontics, as well.

It is an error to think of preventive dentistry only on a public health level and to teach it as a part of a course in public health dentistry. This immediately connotes to many students that prevention and control is a community project sponsored or initiated by an agency.

Public health dentistry, as such, is not a particularly appealing subject to the dental student who plans to enter private practice as most will do. To place such an important concept as prevention solely within the confines of public health dentistry impairs the potential assimilation of this concept by the student.

Certainly a knowledge of the objectives and principles of public health dentistry and the student's responsibility for their achievement in his community is an important contribution to the student's education, but inasmuch as public health dentistry presents curriculum problems similar to preventive dentistry does not imply that the two subjects should be taught together or one within the other.

There are various levels of prevention, and since the prevention of dental disease is accepted as the goal of dentistry then prevention and control should be taught on all levels of dental education, not just in a course in preventive dentistry, public health dentistry, or pedodontics. Any self-contained course presents a problem of proper integration with other courses. It is expected that an independent course in preventive dentistry would become a series of lectures culminating in a final examination for which the student crammed and then promptly forgot. To hope he would or could apply these principles on a clinical level would be beyond expectations. It is not desirable for prevention to be an obstacle or a comparatively minor course in an already overloaded curriculum.

Furthermore, with a course in preventive dentistry in the curriculum there may be a tendency for other dental teachers to "let George do it," relative to the teaching and achieving the concepts of prevention. Also, students, behaving like most individuals, respond to pressures and apply themselves where the greatest pressure is exerted on their learning capacity and time. Although the concept of prevention is important, as a separate course it cannot compete with the demands on the student's time and attention as do the clinical subjects of the 3rd and 4th years.

The manner in which the student receives and accepts the concepts of prevention in dental school will be, in most instances, the way he will practice it after graduation. If it is a part of the course in public health dentistry, he may not even consider prevention as his responsibility in practice. If presented as an individual course, he may be inclined to reserve preventive procedures for isolated instances where he believes it most needed. In this instance, prevention is an effort, something for which he must be ever alert to apply where indicated. However, if prevention is a central theme of his dental education, a concept woven throughout his dental school career, he cannot help to practice and think preventive dentistry. He will practice and achieve the principles of prevention without an awareness of their presence. Prevention and dentistry will be synonymous in all his thoughts and activities pertaining to dental health.

If prevention is the goal of dentistry, then it, too, must be the goal of every teacher, student and practitioner. Once this philosophy is accepted in the dental curriculum then seminars, conferences, etc., in preventive dentistry might be helpful in crystallization, interpretation and integration of the many applications of prevention to which the student is exposed in his clinical and pre-clinical subjects.

In conclusion, the degree of application of the principles of preventive dentistry in the future is dependent upon development and presentation of these concepts in the dental schools today. Sound principles of prevention are supported on a broad base of research. Still, much more needs to be done, particularly on the clinical level. For this, the schools need better teachers with more time available for research. This, unfortunately but necessarily, requires additional financial support for the dental schools, particularly the private schools.

The school must instill in the undergraduate, the recognition of

the need for continued education in order to keep abreast of developments in dentistry, to recognize their clinical significance and application. Finally, the concept of prevention should be taught and practiced at all levels of dentistry and dental education including students, graduates, teachers and state board examiners. This is going to take time, but only then will the responsibilities of the dental schools in prevention and control of dental disease be realized.

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The Patient's Responsibilities in Prevention and Control

CARL J. STARK, D.D.S.

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THE MECHANISM which triggers and operates "Patient Responsibility" in the prevention of oral disease and the attainment and control of optimal oral health, may be classified into three primary and three secondary factors.

The Primary factors include: Age, general health, and personality equations.

The Secondary factors include: Regimentation, institutional, and lay education.

AGE OF PATIENT

The age of the patient may be divided into: pre-natal, pre-school and pre-teen, adolescent, young adult and older adult.

Quite obviously the responsibility for the pre-natal, pre-school and pre-teen age child rests entirely with the parents, or authorized agency if the parents are not in the picture. Fortunately the expectant mother is the most responsibility-conscious patient in the modern dental office. This is especially true with her first child. Her health habits, daily routine, home care, and check-up visits with her obstetrician and dentist are pretty well established. She is genuinely interested in assuming her share of responsibility, not only for herself but for her expected child.

The pre-school, and pre-teen age child: let us stop here again to emphasize that nobody, yes, nobody but the parents are responsible for the diet, health habits and general health care of that child. Regardless of how highly organized our social order is or can become, there will never be or can be a delegation of this responsibility to an

institution or profession. The pre-school, the pre-teen age child is without doubt the most susceptible to suggestion and is usually very tooth conscious. This is the response age of dentistry; the shedding of the first primary tooth is a sign of growing up and arriving. While this is unquestionably the most fertile time of planting patient responsibility, it must also be considered the most delicate time. When possible the combined effort of the parent, which is now invariably the mother, and the dentist should set the stage for this first visit. An older brother or sister may also enter into this picture. The story of prevention in dental matters parallels the story of prevention and immunization in medical matters.

The Adolescent Child—For purposes of classification we will include the elementary and high school grades. This frequently represents a "no-man's land" in so far as the general health picture is concerned. Unless the child has a late childhood disease, an allergy, accident or physical defect, he or she is seldom given periodic medical checkups. Usually they are too old for the pediatrician or too young for the family doctor. It is most unfortunate that the greatest incidence of dental caries should come at a time of life when the responsibility is at its lowest ebb. Patient responsibility at this age is usually in direct ratio to their emotional stability and acceptance of other responsibilities. This age should be the harvest time of earlier plantings of responsibility but frequently does not even represent a fertile seed time. Many parents shift responsibility too soon—"Our Teeth" become "Their Teeth"—too little emphasis has been placed on the cycle of adolescence and resultant dental caries susceptibility. The chief objective should be to instill responsibility now with the knowledge that a reprieve later will be one of many rewards. Regardless of how indifferent or unresponsive a pre-school, pre-teen, or adolescent child may be to acceptance of responsibility for their dental health, or how uncooperative the parents may be, it should be axiomatic that you as a dentist, never, yes, never, give up on a child. As young adults they may still hold their parents and dentists responsible if their dental needs are neglected and will frequently say "why did you not impress upon me the importance of this attention when I was a child?"

The Young Adult. It is most refreshing how this group is assuming responsibility, not only for their dental needs but for the duties of parenthood generally. We make one exception in that the expectant father, who while looking after the needs of his family, is usually tardy in getting around to his own needs. Yes, many parents are still

sending ailing youngsters to school to have the nurse diagnose their ailment. However, if in this day and age, young adults have not acquired a sense of responsibility in health matters, then most certainly much teaching, preaching, precepts, and writings and lay educational material has gone to waste. Parenthood may be acquired over-night but its responsibilities have been a generation in the making.

The Older Adult. It is amazing how this group of patients has increased in numbers during the past generation. The philosophy of responsibility among this group presents many variables and a great challenge. Your fifty or sixty year old patients may admit they are too old, and may outlive their natural dentition, but when they reach eighty or ninety, that same patient expects to keep what teeth they have forever. Unfortunately geriatrics introduces carelessness in personal hygiene. These patients have lost their keenness of sense of smell, taste and vision and have unknowingly become careless of their mouth hygiene. They should be instructed to wear their glasses when cleaning their teeth. (Incidentally you might also suggest that they clean those glasses before they put them on.) Further complications occur when senility and chronic disease enter into the picture. It is at this age that the younger adult in the family may now provide the responsibility lacking in the older adult.

In discussing the responsibilities of the patient from the standpoint of age, another facet should be considered, and that is the age of the dentist. Taking our patients for granted and resorting to stereotype teaching, preaching and admonitions, must be guarded against. Most members of the American College are past forty years of age and have been in the dental profession for twenty or more years. Since we are at least one and sometimes two generations removed from our patients, we can only keep the patient's responsibility alerted by freshening up our approach from time to time.

GENERAL HEALTH

Personal hygiene is with but a few exceptions the most fundamental responsibility of the patient. Unfortunately, it does not always include the mouth and teeth; nor is brushing the teeth synonymous with cleaning them. Proper dietary control and avoidance of food fads and fancies are also the responsibility of the patient. This would include suckable sweets, over-indulgence, and harmful habits. Of extreme importance is the acceptance of the fact that medical science has as yet found no substitute for rest and sleep.

An explanation of congenital, hereditary, and family background influences should be included in this picture of responsibility. Since these factors are inevitable and their origin beyond control, their early detection only are the responsibility of the patient and the dentist. This would include many environmental factors also. An occasional too health conscious patient must be guarded against taking his or her responsibility too seriously when the above mentioned uncontrollable factors are present.

Why is it that our patients accept a coronary infarct, cerebral accident, or a pathological hip fracture philosophically and at the same time cannot understand why a pulp in their tooth should die? Why is it that they accept congenital and hereditary defects in their vision which need correction from early childhood and still put their dentist on the defensive when rampant caries or irregular teeth occur? It is the responsibility of the patient to be realistic in evaluating these inescapable problems since the oral cavities and its structures too are highly specialized organs. General health is a goal to be attained by working for it and not endowed or guaranteed by nature.

PERSONALITY EQUATIONS

As dentists we have box seats in the theatre of life in which we can observe human behavior. We must realize constantly that we are dealing with sick people. We must also realize and admit that there will be clashes in personality and one wonders sometimes whether the success or failure of a dental practice may not be judged as much by the irresponsible and uncooperative patients we are lucky to have leave us as those who are cooperative and responsible which we retain.

A good mentality and high degree of intelligence are no guarantee of patients accepting responsibility. Many times good old fashioned animal instinct is more dependable. The temperamental, non-conformist, or skeptical patient is most erratic in assuming their share of responsibility. In mentioning economics, it is safe to say that there seems to be little relationship between acceptance of responsibility and ability to pay for dental service. As a tribute to our patients, considering many different kinds and types of irritation and pain a dental operation entails, one is prompted to recognize that the vast majority of patients not only accept their responsibility graciously, but in many instances are sympathetic with their dentist in his efforts to render the service required.

SECONDARY CONSIDERATIONS

Secondary factors include: Regimentation, which is basically the armed forces; institutional agencies, and lay education, the latter under professional or non-professional control.

Since other members of the panel will include discussion relevant to the above, we will limit our observations to the following: the mass psychological influence of creating patient responsibility as accomplished by members of the Armed Forces Dental Corps, especially during World War II, has been a tremendous potential. It would have taken many decades to accomplish this through civilian channels. Many of these service-connected patients would not have been reached otherwise. Education given to institutionalized patients has also made many health-conscious and responsibility-conscious patients.

While we recognize the fallacious and extravagant claims of proprietary preparations through non-professionally controlled advertising, one must admit that they too have been instrumental in fostering patient responsibility. "Halitosis, Four Out of Five Have It," and similar slogans have contributed their share. Observance of teeth generally through the medium of television has also created patient responsibility.

As a nation we have made great strides in creating "Patient Responsibility." Perhaps through World Health Organizations of the United Nations we may carry our message to other nations. One wonders where the next frontier will be as there are and always will be many thousands of our people now living who never have or never will enter a dental office.

In conclusion: Summarizing "Patient Responsibility"—in spite of all of the combined dental profession and allied health agency efforts, there will always be those people whose responsibility will be from one crisis to another and to whom a good old fashioned toothache alone can trigger that responsibility.

Since we cannot legislate these people into our office for needed attention, we can only hope to alert and arouse them so that their conscience will hurt them even if their teeth don't. Perhaps the whole question of "Responsibility" is still at Cape Canaveral on the launching platform and by a symposium like this through the American College, the message will go out into orbit and make its contribution as a dental health service!

The Profession's Responsibility in Preventive and Control Measures

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ALL WELL INFORMED dentists recognize that prevention and control measures are the responsibility of the profession, because we have the opportunity not only to observe the causative factors, but the biological consequences that create so much human suffering and ill health. The question is whether these measures are recognized, advocated and prac-

ticed by dentists, educational institutions, governmental agencies, and policy forming organizations to the extent desirable for the welfare of the public and the profession. It must be agreed that the profession as an organization has the responsibility of urging and applying preventive health measures. Such endeavor is in line with the ideals and purposes of the dental profession.

It is our profession's responsibility to promote the development of teachers adequately trained in preventive and control measures, and to see that available time is given in the dental school curriculum for proper instruction in relationship to the other dental courses now being taught. Particular emphasis must be placed on the clinical subjects, since it is in these subjects that the basic sciences must be applied. The deficiency in numbers of trained teachers in preventive and control measures is universally recognized, and can be rectified only by a concurrent training program on the part of the dental schools and other institutions. It would seem that the natural route to the extension of dental knowledge that would carry dentistry to its most useful achievement would be teaching and emphasis of all phases of prevention to the dental student. A detailed analysis of the curriculum and elimination of non-essentials and duplication would

permit this inclusion without overcrowding the instruction program.

The dental profession has not done enough public education, not just about fluoridation, although it has done better on that, but it had not done enough before, and so the public is not accustomed to hearing from the profession. Often the public has a feeling that there is a conspiracy involved; that the dental profession and public health officials are putting something over on them. We have depended too much on the individual dentist to give dental education to the public, to the patients who come to his office. That method reaches too few people. In 1930 25 per cent of our people sought dental service, and even in 1958 only 45 per cent sought it. The demand on the individual dentist for restorative dentistry has become so great that the majority of dentists don't take the time to instruct patients. In 1930 we had 58 dentists per 100 thousand, and today we have 45 per 100 thousand. Consequently it is a very small percentage of the public that even has a chance to get intelligent education about preventive and control measures. That percentage of the public is not great enough to carry a vote for preventive measures in many of our communities that are honestly trying to bring about better dental health. Although use of auxiliary personnel in a dental office is to be commended and encouraged, unless dentists dignify the status of preventive measures by participating personally in such education the patients are not likely to appreciate sufficiently the importance of this part of their dental service.

Until public education by the profession is generally undertaken, we are not going to carve a very big statue in honor of decreasing dental ills. Sporadic attempts by Children's Health Week, an annual state society lecture, or an occasional meeting report have little value. Any advertising expert will tell you that repetition and consistent program are necessary. Regular programs through media of radio, TV, and magazine articles, properly sponsored by the profession, could educate and stimulate many persons. It is our profession that should initiate the program—based on scientific fact, and not on unsupported opinion.

The nation is more health conscious than at any time in its history. The medical and dental professions have had a large share in this great awakening of the public to the need for improved health care. It is now up to these professions to satisfy the demand. That means simply that our dental health program must of necessity be

expanded. The dental profession needs to develop an effective dental education program to disseminate authentic information on oral health, emphasizing the individual's responsibility thereon. Otherwise, because of enhanced interest in health care, the Federal Government may be stimulated to assume the responsibility. Then the initiative of the individual, both private and dental, disappears.

Organized dentistry should make available to the practicing dentist, all information on preventive and control measures. The Central Office tries to do this by the *A.D.A. Journal* and Newsletter for which they should be congratulated. Those of us who disregard this source of information, who refuse to fully appreciate and read these journals, are not only hurting ourselves, but are not giving our best professional treatment and advice to our patients. On the other hand, the profession has the responsibility to present the material in easy, readable form.

More state societies could, and should, forward information bulletins to their members so that each and every dentist knows what is happening state-wide. The many towns and cities that are trying desperately to get a fluoridation program, or some other health program accepted, should have the support and assistance from all the profession, national, and especially state-wide.

Evaluation of the dental research program of the A.D.A., Public Health, U. S. Military services and all health organizations should be brought to the attention of all citizens. The results of these research findings of such important dental issues as:

1. Early diagnosis and treatment.

The profession must be ever mindful of the necessity of alerting the public relative to oral conditions, not only for dental caries, but those dealing with periodontic, orthodontic, and all oral soft tissue lesions. It is time that not only our patients but the entire population understand that periodontal involvements can be checked and a wholesome dentition restored.

2. Fluoridation.

We have gone a long way in promoting this preventive measure. In 1950 46 communities with 1,062,000 people were drinking fluoridated water. In 1958 1,631 communities with 33,300,000 people were drinking fluoridated water. In the light of the overwhelming majority of expert scientific judgment, fluoridation is clearly an aid to the protection of our children's teeth. Nationwide we still have

a long ways to go if we ever expect to get all our communities accepting this preventive measure.

3. Nutrition.

This field is so extensive that we have to use all the healing professions to get the research findings across to the public. It is our profession's responsibility to proclaim proper nutritional habits for the protection of the oral cavity. It is our job to show the carbohydrate problems relative to a healthy mouth and body.

4. Dentrifices.

"Doctor, what is the best toothpaste for our family to use?" How many times you have heard this question, and how many times have you felt like saying, "soap"? We have to make it known to our people that it is not fabulous substances that protect the teeth, it's the how, when, and where to use these dentifrices. Such dentifrices have shown some promise, but they have not yet been sufficiently tested on a clinical scale to speak positively of their success. Advertising which stresses that their users need not brush their teeth very often, seems to be a definite setback in the attempt to improve tooth brushing habits. Proper prophylactic habits should be known and stressed to a point so that they are as much a part of our daily routine as eating and washing.

5. Research in preventive methods.

The dental profession should encourage all research organizations to investigate new methods of preventive and control measures.

Many of these suggestions are already in effect by our A.D.A. Councils. While encouragement of the expansion of preventive education and research by A.D.A. agencies is certainly worthwhile, we should recognize and be willing to pay the increased dues that will be necessary to sustain such a constructive program. The road we have travelled has been a rugged one, but we have been sustained by our desire to serve humanity. Likewise, the road ahead will offer many hazards, and the success with which we will overcome them will depend upon the willingness of the profession to shoulder its full responsibilities in a period of time when new facts and forces threaten to overwhelm us.

Preventive Aspects of Dental Health Service

PATRICIA COLLETTE, B.A., M.A.

Chicago, Ill.

EDITOR'S NOTE: Miss Collette received her education at Beloit College in Wisconsin and the University of Chicago. Her interests are in the sociological aspects of health service and she has participated in a number of research studies in this field since her association with the National Opinion Research Center of the University of Chicago in 1947. Among these studies are:

The Hunterdon County (N. J.) Study of Chronic Illness, sponsored by the Commission on Chronic Illness;

A study of the career orientation of medical students and a study of the career intentions of doctors on active duty in the Army, both under the sponsorship of the Office of the Surgeon General, Department of the Army;

Study of family medical costs and voluntary health insurance—now in progress—the follow-up study to the one done in 1953) sponsored by the Health Information Foundation of New York City.

She directed the study of factors associated with preventive dental practice at the National Opinion Research Center, which study is supported by the American College of Dentists.

by appointment, with a national sample of 758 dentists in active private practice and with 59 dental hygienists associated with them. These 758 practitioners were queried with regard to general and specific aspects of their own practices, and about dentistry generally. A representative sample of contemporary American dentists, they have the following characteristics:

HOW EXTENSIVELY is preventive dentistry practiced today? Why are some measures used frequently and others only infrequently or not at all? What sort of dental practice is conducive to, or resistant to, preventive dentistry? What factors dispose the practitioner toward prevention? Questions such as these have long concerned the profession generally, and in 1957, at the suggestion of the American College of Dentists, the National Opinion Research Center with the support of the College, the Zoller Memorial Dental Clinic of the University of Chicago, and the U. S. Public Health Service undertook a study to find out the answers.

Before describing the findings of that study let me tell you briefly about it. In June and July of 1957 NORC field representatives conducted personal interviews,

- . . . almost half (43 per cent) practice in a metropolitan area with a city of a million or more.
- . . . 99 per cent are in independent practice, ranging all the way from solo to partnerships.
- . . . three out of ten have no one working with them or for them; but almost half (46 per cent) have one auxiliary worker, usually a chairside assistant or a secretary.
- . . . about one dentist in ten has a hygienist associated with him.
- . . . 92 per cent of the practitioners interviewed are in general practice and most of them have always been so.
- . . . nine dentists in ten treat patients of *all* ages but one in ten doesn't treat children under six years of age.
- . . . in age the sample practitioners average between 45 and 50 although one active practitioner in twenty is 70 or more. At least a fifth of those interviewed have no plans to retire but hope to practice as long as physically able.
- . . . the dental work week in 1957 averaged almost 44 hours but one independent, active practitioner out of every four nonetheless reported himself so busy that he turned patients away, while only one in ten would have liked more patients.
- . . . a quarter have an academic degree other than a dental degree and the same proportion have had graduate training or hospital training in a dental specialty. Almost two-thirds of today's practitioners have taken "refresher" or continuation courses sometime since graduation from dental school.
- . . . four dentists out of five attend at least one professional meeting, clinic session, or study group during the year. About 90 per cent belong to a general professional organization and 20 per cent to a specialty society.

Our questioning of these members of the dental profession centered around a series of a dozen or so procedures and educational activities—ranging from the use of periodic radiographic surveys, treatment of fractured incisors, use of biopsies, to the promotion of community water fluoridation—which are either preventive in nature themselves or which further preventive practice. Time now permits me to mention only a few of the highlights from these findings.

X-RAY SURVEYS

The x-ray survey for purposes of examination and treatment planning is in almost universal use today. Only one dentist in a hundred does *not* use them at least occasionally while two-thirds of those in the sample use the x-ray with almost every examination. Underlying this widespread utilization of the x-ray is a most favorable attitude on the part of practitioners, for fewer than four in ten suggest that there are any *disadvantages* in them, and only one dentist in seven even mentions the possibility of radiation danger. About half of the practitioners interviewed report that they have modified their machine

or their method of taking pictures in the past few years, but it is noteworthy that in the summer of 1957 a quarter of the dentists in practice were using x-ray machines acquired in 1939 or earlier.

PROPHYLAXIS

Dental prophylaxis is another widely used procedure, being a routine part of each patient's treatment for 85 per cent of the sample, with an additional 11 per cent giving them, but not routinely. Understandably enough, almost all dentists having a hygienist report the prophylaxis to be a routine office procedure. The practitioners in the sample feel their patients to be almost as favorable to cleaning and polishing as they themselves are. Ninety per cent of those in the sample consider the prophylaxis "very important" while 80 per cent think their patients favorable to them also—even when no other treatment is necessary.

RECALL SYSTEMS

About three-quarters of the country's dental offices have a recall or reminder system. As far as members of the sample are concerned the chief advantage of the recall to the *dentist* lies in the higher quality of work it makes possible and secondarily, in its utility as a practice builder; while the prime advantage to the patient is thought to be the preventive care which regular visits make possible. Dentists who have no recall or reminder system currently give essentially practical reasons for this—either their patient load is heavy enough as is, or they had a recall system formerly but found it ineffective.

By and large, patient attitude constitutes only a slight barrier to the successful recall system since about three-fourths of the practitioners feel that their patients react, or would react, favorably to being *urged* to get care at regular intervals, regardless of whether they are having dental difficulty or not.

BIOPSIES

Nine practitioners out of ten indicate that, sometime in their practice, they have encountered a soft tissue lesion which made them suspect oral cancer, and almost half of those interviewed volunteered the information that they keep a special look-out for growths, neoplasms, and lesions while conducting an examination. When such signs are detected the response reported overwhelmingly is to refer the patient to another practitioner, usually a specialist, for follow-up,

although one dentist in five either makes a biopsy himself or treats the condition himself.

FILLING PRIMARY TEETH

Dentists with patients under the age of 6 report that their most usual way of handling cavities in primary teeth is by filling and only a negligible number say that their usual procedure is to extract the tooth at the time. Since having patients of this young age is itself indicative of unusual parental interest and cooperation, it is not surprising to note that about five times as many dentists think parents favorable to filling primary teeth as think them unfavorable to it.

TOPICAL FLUORIDE APPLICATION

Topical fluoride treatments are given or recommended by two out of three dentists who treat children as well as adults. While a majority express the opinion that fluoride applications require only a relatively small amount of time for the results achieved, a not insignificant number—one in six—think fluoride applications take a relatively large amount of time. Interestingly enough, although fluoride treatments are fairly common, dental practitioners appear to be somewhat dubious about them. Among the total group of dentists interviewed, 38 per cent express the view that fluoride treatments are less effective than other office procedures to combat decay, and 57 per cent of those not giving such treatments feel them ineffective or less effective than alternative procedures.

LABORATORY TESTS FOR CARIES ACTIVITY

Laboratory tests to determine caries activity are used the least among the preventive procedures inquired about. Only one dentist in five reports himself as employing them at all and only a handful use laboratory tests routinely. The chief reasons reported for such restricted use are the belief that these tests demonstrate nothing that can't be shown in other ways and that the practitioner himself lacks the special knowledge or equipment to give them. Few dentists report adverse patient reaction to be a reason for not using these tests.

PATIENT EDUCATION

Patient education as a component of preventive dentistry is a well-accepted and frequent activity in the contemporary dental office. Almost 9 dentists in ten report at least occasional inquiries about

dental problems from their patients, and only three in a hundred make no attempt to instruct patients who don't ask for advice. Underlying these educational efforts is a firm belief in their value; 85 per cent of those interviewed think it "very important" that they advise and instruct their patients.

OTHER EDUCATIONAL ACTIVITIES

As far as education outside the office is concerned, however, it is another matter. Despite the fact that the overwhelming majority of dentists subscribe to the statement that it is the profession's job to educate the general public regarding oral health and preventive dentistry, this constitutes only a small portion of the average practitioner's activity. Although five out of six dentists report that there is a school dental health program in the locality in which they practice, only a third of those who *can* participate in such a program do so. Even more indicative of the concentration of educational activity to the dental office is the fact that but one dentist in seven reports himself as belonging to, or working with, any community health group—other than the school dental program.

WATER FLUORIDATION

In the area of community water fluoridation, however, participation is more frequent. In localities where community water fluoridation was an accomplished fact in 1957 slightly less than half of the practitioners who could have taken part in the promotional campaign there report that they did so. In cities and towns in which promotion was still in process in 1957, just over half of the dentists interviewed reported themselves as engaged in it with this involvement ranging all the way from initiating the campaign to passive concurrence in the moves of the local dental society.

While a substantial majority of practitioners report themselves as being favorable to the fluoridation of public water, nonetheless one dentist in eight days says that he is "neutral" or "unfavorable" to it. These basic attitudes toward fluoridation are reflected clearly in participation in fluoridation promotion, for 57 per cent of the dentists favorable to fluoridation compared to only 10 per cent of those unfavorable or neutral to it were promoting fluoridation in their communities at the time of the interview.

There is, of course, considerable variability from practitioner

to practitioner in the number of preventive procedures he uses and the regularity with which he employs them. On the basis of those investigated it is possible to distinguish the dentist with the highly-preventive practice from the dentist with the moderately-or negligibly-preventive practice and to determine some of the factors which are conducive to preventive-mindedness. Analysis of the full range of factual data as sketched in the preceding few minutes yields some highly useful insights. These will constitute the burden of the analytical report which will soon be generally available.

Taking the practitioners of the country as a whole, about a fifth have a practice which is "highly-preventive" and about a fourth, one which is only "negligibly-preventive." That three-quarters of the country's dentists practice in at least a "moderately-preventive" manner is both an indication of the progress the profession has made in promoting preventive-mindedness and of the work that remains to be done.

Recruitment of Dental Personnel

The Need for a Recruitment Program in Dentistry

J. Wallace Forbes, Philadelphia, Pa.

Interesting Youth in Dentistry—American Dental Association Efforts

Reginald Sullens, B.M.E., Chicago, Ill.

The Dentist as a Citizen of the Community

Rabbi Levi A. Olan, D.D., Dallas, Texas

Recruitment for Dental Hygienists

Margaret E. Swanson, B.S., R.D.H., Chicago, Ill.

The Dentist's Responsibility in Recruitment

Frank P. Bowyer, Jr., D.D.S., Knoxville, Tenn.

Aptitude Testing in Relation to Professional Career

John E. Buhler, D.D.S., Atlanta, Ga.

Some Factors That Influence Recruitment

Nathan Kohn, Jr., LL.B., Ed.D., St. Louis, Mo.

Moderator

J. WALLACE FORBES, D.D.S.

Philadelphia, Pa.

The Need for a Recruitment Program in Dentistry

J. WALLACE FORBES, D.D.S.

Philadelphia, Pa.

EDITOR'S NOTE: *Dr. Forbes is in private practice, but has devoted some of his time to teaching for the past twenty years at Temple University Dental School. He is a graduate of that school.*

He has long been interested in the problems of education and in his community is a member of the Board of Education. He served as a moderator at the New Jersey White House Conference. He is a Trustee of the Wolcott Foundation for the granting of graduate fellowships to George Washington University in the Nation's Capital. He is a Past-President of the Pennsylvania Association of Dental Surgeons and the Alumni Association of Temple University Dental School.

He has been secretary-treasurer of the Philadelphia Section of the American College of Dentists since its inception in 1948 and is presently serving as Chairman of the Recruitment Committee of the College.

gap is widening daily and by 1975 it will reach critical proportions.

As our program progresses, you will become aware of some startling and revealing facts. Industry has been "dangling the bait" before all scientific minded youngsters, for the past few years, to enter the fields of engineering, atomic research, aero-dynamics and the like, with high salaries starting the first year after graduation. Many potential dental students have responded to this clarion call, and our profession is beginning to suffer. When the profession suffers, the oral health of the public suffers; when oral health suffers, the physical well being of a nation is in jeopardy.

Since the Russians sent a dog orbiting around and around the earth, the future of dentistry has felt a greater shock. This was the stimulus that has driven more and more scientific minded men and

WITH THE ANNUAL increase in population in the United States, we have become aware of the amazing revelation that dentistry is not producing enough quality dentists. Although our national population is expanding, our profession has practically remained status quo. Common sense shows that we cannot remain in our present position of supplying a constant flow of approximately three thousand graduates each year, while the nation is rapidly populating each town, hamlet and city with increased growth.

Our ratio of dentist to population has been gradually diminishing for the past fifteen years. The

women (who would be future dentists) into other fields. The compensations in other areas may be more inviting and more glamorous. The cost and time needed to train dental personnel may be a deterring factor. There may not be enough scholarships available for students who would like to pursue a dental career. We may not be properly or adequately approaching and selling youth at high school and college level to choose our profession. Whatever the reasons, the fact still remains that not enough of the quality students are seeking dentistry as a life's work.

It becomes imperative that we pause and reflect upon our present and future position as a profession. The future of dentistry will depend on the direct ratio of the quality, calibre and number of students that matriculate in our dental schools each year. If we are to keep abreast of the forward surge in the population growth, only two things will help—preventive dentistry and opening two new dental schools every year between now and 1975. We need 150 additional graduates each year just to maintain a sane balance between the dental and national population.

These are just a few of the reasons why there is a need for a definite, well defined recruitment program in dentistry.

Interesting Youth in Dentistry—American Dental Association Efforts

REGINALD H. SULLENS, B.M.E.

Chicago, Ill.

EDITOR'S NOTE: *Mr. Sullens received his undergraduate education at Northwestern University and is completing his study for the Ph.D. in education at the University of Chicago. He has been a member of the staff of the Council on Dental Education of the American Dental Association since 1952, starting his services with the Council at that time as the Director of the Division of Educational Measurements. In 1953, he was appointed Assistant Secretary of the Council and has served as Associate Secretary of the Council since 1957. He was elected to associate membership in the American Dental Association in 1954 and has served as a committee member or consultant to many organizations concerned with dental education.*

dental schools. A brief review of some of the programs which the Council has designed and conducted in the area of recruitment will illustrate the degree of importance which the Council has assigned to this essential and continuous obligation.

It is perhaps an over-simplification but those of us on the Council staff sometimes like to think of Council programs as either operational activities, such as accreditation, or as service programs. One of the most important service programs of the Council is that of recruitment. I should like to emphasize this point, for I believe its emphasis will demonstrate as well as can be done, the nature of the activities which the Council presently carries on in this area and which, so far as I know, it plans to continue in the future.

It has never been the view of the Council that it should assume a *direct* or operational responsibility for recruitment. There are many reasons for this but perhaps the chief one is the belief that effective recruitment depends heavily upon a direct contact between the

ALTHOUGH NOT mentioned specifically in the *Bylaws* of the American Dental Association as a responsibility of the Council on Dental Education, the development of programs and activities designed to interest youth in dentistry has long been one of the important concerns of the Council on Dental Education. This is not surprising, for one could quite easily and defensibly take the position that the ultimate quality of dental education depends rather directly upon the calibre of student taken into the

potential student and the "recruiter" and the Council is not in a position to make any sizable contribution toward the direct contact with students. To be sure, the members and the staff of the Council occasionally do discuss recruitment with students and with high school and university counseling personnel, but it has always been felt that the Council could make more significant and effective contributions through other and more indirect approaches. To put it another way, the major focus of the Council's recruiting activities has been on the preparation and distribution of facts and materials which can be used by others in developing an active program of recruiting students into the profession.

There is one exception to this observation. Most of you have heard of the dental aptitude testing program which has been administered by the Council on Dental Education for more than ten years. Another speaker on this program will discuss the contributions which dental aptitude tests make to recruiting activity, so I will not go further into this. I would like to mention, however, the very substantial value which the dental aptitude testing program has rendered simply through the mechanism of spreading information about dentistry and dental education. Every year the Council distributes more than 60,000 brochures on the dental aptitude testing program; every year information on the dental aptitude tests is sent to all of the 1,300 colleges and universities in the United States in an effort to acquaint them with the general admission requirements of the dental schools and other basic information; and every year articles on the dental aptitude tests are published in the educational journals which are read by persons in all fields of teaching.

I should like to review briefly the types of activities which I have designated as service programs of the Council on Dental Education. These can be grouped into 1) data collection, 2) preparation and distribution of publications, and 3) encouragement of recruiting activities by other organizations.

DATA COLLECTION

One of the important aspects of any recruitment program is the availability of the facts and figures upon which a program can be planned and evaluated. There is a need to know how many applicants there are over a period of years, where the applicants come from what some of their characteristics are, how many are successful in gaining admission to dental school, how the quality of the ap-

plicants holds up over a period of years, and much other information of this nature. All of these data and a great deal more are collected routinely by the Council on Dental Education. An analysis of this information makes it possible to know how successfully the profession is performing in the critical area of recruitment.

PREPARATION AND DISTRIBUTION OF PUBLICATIONS

One of the early acts of the Council when it was established in 1938 was the preparation of a booklet containing the information which a student interested in dentistry might wish to know. Since that time there has never been a period when the Council did not have some type of informational publication on dentistry as a career nor when it did not have a substantial amount of data that could help a student to decide upon a career in this important health service. The most recent edition of this basic recruiting manual, *Careers in Dentistry*, was prepared less than a year ago and has already been through three reprintings of more than 40,000 copies. Most of you have probably seen this attractive booklet. If you do not have a copy, the American Dental Association will, upon request, be glad to mail one to you. This booklet, written for the high school student and college freshman, is distributed by the Council to potential students, parents, educational institutions and many other agencies directly, but this type of distribution can do only a part of the job. Similarly, the other materials printed by the Council, such as the dental aptitude brochure which I have already mentioned, the *Dental Students' Register*, lists of accredited dental schools, and the many publications which deal with specific questions such as finance, application dates, and so forth, can also do no more than provide information to the student who is already interested to some degree. The real problem in recruitment is to bring to the attention of more students the facts about dental education and the rewards of a career in dentistry. To a great extent, this is where the Council—and any other agency of a national organization—begins to falter, where we must turn to those who have the most direct contact with students and their parents and who have the greatest asset in the world to sell—their profession.

ENCOURAGEMENT OF RECRUITING ACTIVITIES BY OTHER ORGANIZATIONS

Many studies have been made to determine just what it is that motivates a student to select one field of endeavor over another and,

although there are some good data available to support the proposition that this is not a simple decision determined by one single factor, most people will agree that the personal example and influence of those in the field, when properly directed and exerted, can be as important as anything. An increasing recognition of this has led the American Dental Association more and more into the development of programs which depend upon the state and local dental societies and the individual dentist. Specifically, a manual on "A Dental Student Recruitment Program for Local Dental Societies" has been prepared and sent to all of the constituent and component dental societies. The purpose of this manual is to suggest ways in which the practicing dentist can participate in the important program of maintaining the quality of personnel coming into his profession and identifying the materials which the Association has prepared for him. It is too early to measure the effectiveness of this program but there is little doubt that this will be one of the most effective tools for recruitment yet developed.

You have probably heard that there are about two applicants for each position in dental school, thus, in terms of number alone, there would appear to be no problem of recruitment in dentistry. Number alone, however, is not enough. We must also be concerned about the quality of the student applying to dental school; we must have enough good applicants that the schools can select their classes from those with above average ability; and we must have some concern for attracting into dental education those students who will develop into the research scientists and educators who are so essential to the vigorous and continued growth of any profession. Within the past few months, the Councils on Dental Education, Therapeutics and Research, with the Bureau of Public Information, have developed the text of a brochure intended to interest high school students in preparing dental exhibits for the National Science Fair Program. There is not sufficient time to outline the potential significance of the National Science Fair movement, but anyone interested in this activity can secure information about it from the Central Office of the American Dental Association.

In conclusion, I would like to say that the American Dental Association, like the other organizations in the health professions, is currently concerned with the problem of recruitment in the light of recent and increasing public and governmental interest in build-

ing up a sizable manpower pool of scientists of every conceivable description. Government, industry, and the public at large have become increasingly sensitive to this nation's seeming failure to keep pace with the Soviet Union in educating scientists in all branches of knowledge for peace and for war. In the face of this growing concern, the health professions can reasonably expect that many young people of high school and college age who might normally be pausing to consider an education for dentistry or one of the other health professions, will be encouraged and persuaded to prepare for a career as a research chemist, an electronic engineer, or any of the other myriad of scientific pursuits required by our world today. We in the health fields can look for better salesmanship in these other fields and cannot, in our common interest, very seriously object to a competition which reflects a national concern. We must, however, recognize this competition and be more alert than we have been in recent years to get our share of good students for careers in the profession of dentistry. This concern is not yet a crisis, but it almost assuredly will be unless each of us gives more than lip service to the recruitment of dental students.

The Dentist as a Citizen

RABBI LEVI A. OLAN, D.D.

Dallas, Texas

EDITOR'S NOTE: *Rabbi Olan received his Bachelor of Arts degree from the University of Cincinnati; his degrees of Rabbi and Doctor of Divinity from Hebrew Union College. He is very active in community affairs in Dallas, and conducts a regular Sunday morning radio sermon over station WFAA, Dallas. He is the author of several books and holds the pulpit at Temple Emanu-El in Dallas.*

DENTISTS, TO paraphrase a quip, are like all other people only more so. The same may be said for all of us no matter what our work, faith, color, or nationality. In fact it is necessary for us to stress this fact today because there is a tendency to atomize the human creature. The academicians carve us up into the "economic man," the "political man," the "social man," etc. The essential wholeness of the person is being sacrificed to an analytical dissection. The fact is that we are all human and share a common intrinsic quality of our nature. It is also true that we are all more than merely human; we are distinctive in our individuality. The dentist as a citizen is like all other citizens in that his work, his place in the family, his play on the golf course, his voting at the polls, are all part of his citizenship.

The past half century has witnessed a growing struggle between the uniqueness of the individual and the absorptive demands of society. The literature of our day speaks of the "organization man," the "lonely crowd," "other directedness," all of these pointing to the victory of the mass over the particular. The tension which arises from our inherent need to be ourselves and an increasing demand by an expanding social structure forms a large part of modern man's anxiety. The resolution of this conflict will not come through pious admonitions or a nostalgic yearning for the good old days. The fact is that our inter-dependency increases with every new invention and every step forward we make. The private well in the back yard has been replaced by a huge water plant which serves the whole city. If the water reservoir is poisoned, it affects every home. In the same sense, if someone explodes an atomic bomb in one place, it involves the survival of every creature on earth. In every aspect of our lives we are involved with each other for good or for ill. It will take a

tremendous effort and a resolute will for any of us to retain our individuality in the years ahead.

Since the richness and fullness of the life we seek must be lived within a social setting, we are inevitably involved in creating the good community. How we define it will certainly vary among men, but there are basic factors upon which we may agree. The good community should be physically clean and beautiful. Its citizens ought to have every opportunity to enjoy good health and to have access to the best medical service in time of sickness. They should be able to find work to do that which is rewarding both in itself and in its compensation. The opportunities for a good education, for wholesome recreation, for a high cultural experience, are of the essence. The services of benevolence and the agencies of character building must be vigorously maintained with dignity and devotion. The good community respects differences and provides for their harmonious living together. As a resource for faith and hope, it must maintain in active and positive operation the religious institutions from which men draw their spiritual strength.

The issue in our time is not in the description of the good community, since most people the world over will accept the basic factors we have here suggested with some minor variations. The major disagreement is in the method of achieving it. A large part of the world today is committed to the concept of authoritarianism as the most efficient and rapid instrument. The vast growth of the totalitarian society is one of the significant facts of our time. An equally large portion of the world holds to the belief that the free society in which the citizen is endowed with rights and responsibilities is the better road to the good life within the good community. This ideological struggle is being fought out on the international stage and in every room and hamlet of our nation. The conflict between freedom and authority is the principle issue of this age of crisis.

The threat to individual freedom is coming at us from many sides. There is, for example, the matter of "bigness" which increasingly characterizes every aspect of our society. Industry and trade tends towards fewer but bigger corporate units, and to match this, labor unions must amalgamate their forces. Schools are bigger, churches are bigger, chairities are bigger, indeed bigness is one of the major facts of our age, and it augurs to be even more significant in the years ahead. Bigness has its advantages in efficiency and economy, but it

also tends to submerge the individual. The sensational discovery and production of new sources of energy and power will surely aggravate this already serious dislocation. The imminent possibility of an annihilation now sharpens the fears of every person and tends to drive him to give up his liberty for security. Touch our society at any point and it reveals a basic challenge, and in most instances a frightful threat to man's freedom.

Among other requirements, there are two essential demands which the free society makes upon its citizens. A free man must be a thinking man, since the nature of the community depends upon his decision along with others. He must be informed, be able to read and listen with critical intelligence, analyze the complex factors, judge the validity, and then decide and cast his vote. The life of a subject in a totalitarian state is much simpler, he has only to learn one word "yes." Somebody else does all the rest. The life of freedom is very demanding.

There are disturbing signs which point to a weakness in our democratic society serious enough to lose our freedom for us. Everyone is seeking the easy and pleasurable way, and the professional educators have uncritically accepted the charming belief that learning can be accomplished without diligence, concentration, hard work, and even sweat. The art of reading for adults has taken the course of an outline of history, an outline of philosophy, digests of magazine articles, pictures instead of words. The avenues of escape are the most heavily traveled in our land; who-done-it books, movies, television programs, westerns, horror and sex. One cursory glance at any magazine rack at the corner drug store ought to confront us with the terrible question—how free can any people be whose minds feed on such food?

It must be said here too that men and women who were once exposed to the disciplines of a higher education often reveal the fact that their intellectual development was arrested with the diploma. One finds that they are addicts of this new escape culture and that their judgments about the community are rarely the result of knowledge and intelligent judgment. The threat to our freedom as individuals and to our free society is not a matter of enemies outside, but the failure of the citizen to accept the difficult role which freedom demands from him. An ignorant, unthinking citizen is not free.

The second factor which characterizes the behavior of the citizen in a free society is his acceptance of a program of voluntary discipline.

Life abhors a vacuum, and society eschews anarchy. In 1922 the Italian people could not organize themselves as free men to build their good community, so Mussolini did it for them. Hitler did it for Germany, and Stalin for Russia. In a simpler way we know that if a citizen in our city does not of his own will drive carefully and sanely, the authority of the police compels him to do so. When industry failed voluntarily to meet the demands of the working people for better working conditions and higher wages, they invited strong labor unions with whom they now have to deal under threat. The fact is that when men fail voluntarily to do what is necessary for the life of the community, they will ultimately face the power of an authority which compels them to do it. The growing power of a central government ought to concern every free citizen, and this is not to disparage the primary role of government. Without it we would not only have anarchy, but we should become the victim of power hungry forces all over the world. The danger lies in the fact that this central power must step in when we fail voluntarily to do what is needed. Socialized medicine ought to be avoided and discouraged, but if we fail voluntarily to provide reasonable opportunities for health and service, someone will surely do it for us. It is not enough to decry the growing authority of government. Freedom demands that we meet the needs of the good community by voluntary action and discipline. This is true for schools, recreation, culture, industry, yes, for every aspect of our common life. Freedom is a responsibility which demands the discipline of voluntary response.

The crisis of our age is severe and complex but at its core there is the danger of the loss of freedom. We ought not to make the mistake of thinking that as individuals any of us can escape from it all to the security and warmth of our own little nest. There is no hiding place today. If we continue to stick our heads in the sand we will ultimately lift them up only to confront the monstrous idol of authority before whom we will offer up our liberties and our souls. If we were challenged to find a motto for our time we could do worse than copy the inscription on a courthouse in New England—"Obedience to Law Is Liberty."

Recruitment in Dental Hygiene

MARGARET E. SWANSON, B.S., R.D.H.

Chicago, Ill.

EDITOR'S NOTE: Miss Swanson, Executive Secretary of the American Dental Hygienists' Association, is a graduate of the University of Maryland, having received her degree in education in 1938. In 1942, she was graduated from Temple University, School of Oral Hygiene in Philadelphia, Pa., and for fifteen years, was in private practice in Washington, D. C. with her father.

In 1950 she became Executive Secretary of the American Dental Hygienists' Association on a part time basis, and in January, 1958, took over this position on a full time basis.

She has served as consultant to various committees of the Council on Dental Education of the American Dental Association and on various regional education boards. She also serves as the representative of the American Dental Hygienists' Association to the Council on Dental Education on all programs of accreditation of the schools of dental hygiene.

trained students, the later phases of education and training would fail in their objectives.

An attempt will be made to state this problem from the standpoint of the findings and experiences of the schools of dental hygiene, and to present some of the items that need to be considered in arriving at a solution to this problem.

It should be kept in mind that the dental hygiene program should never be considered static, but rather, that it is a dynamic vehicle through which we are educating and training personnel to work as a part of the health team. Our present educational program is not one that is regimented, but instead, it is expected that changes will occur which may affect not only the curriculum and the examination program, but also the goals themselves. In addition, changes may occur which will make it necessary that we realize that the needs of

IT IS MY PLEASURE to participate in your program today and to speak to you on the subject of recruitment in dental hygiene. This subject can be divided into two main areas. First, student recruitment and second, re-recruitment of graduate hygienists into practice.

Taking the first area, that of recruiting students for the study of dental hygiene, there are many basic reasons why this recruitment is necessary. The main reason lies in the proper selection of students and in the establishment of an acceptable recruitment program. This is extremely important, for without a sufficient number of adequately pre-

the profession may require recruitment from another segment of the population, with different backgrounds of experience and learning.

At the present time, the thirty-three dental hygiene schools do not have identical or even similar policies with respect to the types of students they recruit. Three of the schools definitely require that the group come from a segment of the college population. Some of the schools select from high school graduates, but do so with the idea that these girls must be equipped to eventually earn a baccalaureate. From this it is obvious that the problem is not one in which the final goals are fixed, but instead, it is a problem where the individual differences of the schools and the individual needs of the communities and areas are important and must be considered.

The field of recruitment is dependent upon several factors: 1) the available reservoir of personnel from which we can draw our prospective students for the dental hygiene program; 2) the types of persons who could potentially gain from the dental hygiene education programs, and 3) the type and caliber of persons who could conceivably meet the demands of the profession and the public.

On the national level there has recently been increased activity in the area of recruitment. This has been brought about through the inauguration of an Aptitude Testing Program which has been developed by the American Dental Hygienists' Association, and now is sponsored by the Association as a service program for the schools.

This program was undertaken with careful consideration and study, not only by our Association but also by the Council on Dental Education of the American Dental Association. Three pilot studies on aptitude testing have been completed and the results are very positive and conclusive. The statistical data obtained are sound, indicating not only the similarity or uniformity of the three successive groups studied, but also, the stability of the tests used.

Immediately following these pilot studies, the Dental Hygiene Aptitude Testing Program which was designed to test applicants rather than accepted students, was put into operation. The first group of applicants for the 1958 class was tested in October, 1957, and the second group in April, 1958. In the original plans of the number to be tested, it was estimated that approximately 1,000 applicants would participate in the program during the first year of operation. The number of applicants actually tested exceeded the estimate by 34 per cent.

With the inauguration of the Dental Hygiene Aptitude Testing

Program in 1957, and the prior development of the *Dental Hygiene Aptitude Testing Brochures*, more areas of the lay public are being made aware of the field of dental hygiene. It is felt that the *Brochure* will prove to be a valuable medium in recruiting young women to the profession of dental hygiene.

In the first year of operation, approximately 25,000 brochures were distributed. These were sent to every Junior College in the United States, to every secondary school in selected areas, to vocational guidance departments, to state public health departments and to constituent dental hygiene associations for distribution. One avenue of approach which we were not able to cover during the past year, and one that might possibly be an excellent source of distribution is the state dental societies and we hope to enlist their aid in the future. Thus, the dental profession could also serve as a medium for such recruitment, for where else should the need for more qualified dental hygienists be realized than by the dentists in active practice? The dentists must surely realize the advantages in the employment of such auxiliary health workers in rendering a more complete dental service to the public.

The American Dental Hygienists' Association has aided in the preparation of monographs which have appeared in many guidance manuals for secondary schools, and a few popular national magazines and newspapers have carried articles concerning opportunities in the field of dental hygiene. These articles bring forth many requests for additional information, but unfortunately, not all of those that receive this material are able to meet the academic requirements for admission to the dental hygiene schools.

Many of the older established schools of dental hygiene do not carry on an active recruitment program, for they are located in areas where the dental hygiene profession is firmly established and the opportunities for dental hygienists are fully recognized. The schools that have the real problem are the new schools that are established in areas where it is necessary for the school administrators to actively promote a program of public education in the value of dental hygiene and the opportunities for service in this field of health activity.

Some of the newer schools are finding it exceedingly difficult to gain entree to groups that should be potential material for this professional training, namely the secondary schools. In some areas it is almost impossible for representatives of the dental hygiene schools,

or for that matter, even representatives of the profession to meet and discuss dental hygiene with high school students. Many of the dental hygiene programs are located in state universities and must draw the majority of their students from within their own state, thus limiting somewhat the effectiveness of a national recruitment program.

In formulating a recruitment program, there are a number of vital points which should be considered before any attempt is made to activate such a program:

1. The entrance requirements of the individual schools should be clear.
2. One should have knowledge of the field of dental hygiene upon which the individual schools put emphasis of employment. (It is true that employment situations in areas constantly change, and the graduates do move from one area to another, but nevertheless, the basic trend, whether it be to private practice, public health service, educational or institutional employment, can be determined.)
3. At what level of education should the recruitment program begin? Too many students wait until they have almost completed their senior year of high school before they consider their vocational field, and as a result, if they then desire the field of dental hygiene, many of them have not completed the necessary academic requirements for admission to a dental hygiene school and some potentially excellent students are lost. I feel that an earlier period than the senior year, possibly as early as the sophomore year would be a desirable time to acquaint the student with the potentialities and opportunities of the profession of dental hygiene. In presenting it at this level in the high school course, it would also allow sufficient time to meet the academic requirements for admission.

In presenting the dental hygiene story to the prospective student, it has been found that there are a number of salient points which are vital. Some of the points which are stressed are: professional status of the dental hygienist, the availability of employment, salary, variety of positions available, public service (a point that is often neglected), opportunity for collegiate training and degrees, teaching opportunities and personal contacts. There are probably many more pertinent factors, but these are of the greatest interest to high school students and prospective dental hygiene students.

There are probably many methods which could be utilized in a recruitment program but one which I feel would be invaluable would be the use of motion pictures. I know the American College of Dentists has a film available for the profession of dentistry and I would be interested in discussing the effectiveness of this venture at some future date. Unfortunately, our funds are not adequate at the

present time to produce a film of the caliber we desire, however, I am certain that such a film would have far reaching results.

As to actual figures, in 1957, there were 2,477 formal applications completed, and of this number, 1,164 were accepted. It is apparent from these figures, that there are approximately two applicants for every space available in the schools of dental hygiene.

While figures for applicants for 1958 are not yet available, it is reasonable to assume that the total number will be increased over the previous year. This will be due to the fact that many high schools and college advisers have now been informed of the aptitude testing program in time to alert their students who are planning careers in dental hygiene.

I now come to the second area of recruitment, that of re-recruitment of graduates into the practice of dental hygiene. To say the least, this is not easily accomplished. The main hindrance lies in the fact that many of those interested in returning to practice would be required to undergo additional licensure examinations, which would be necessary because of their moving to other areas of the country.

The one possible solution to this problem would be greater reciprocity between states. This we all realize is difficult to accomplish, but one project which might possibly lead toward future reciprocity, would be the establishment of a national-board-type examination program.

During the past three years, our Association has undertaken the development of an Achievement Testing Program. While the main objective of this program is the development of adequate examinations in the major areas of the curriculum, as an evaluation of the effectiveness of the educational programs, this undertaking could possibly be the basis of a national board examination.

If a national board could evolve from the valid statistics which I feel will be forthcoming from the Achievement Testing Program, such a national board would not be a substitute for but rather a solution toward the re-recruitment of available personnel into dental hygiene practice. This measure would make available the previously trained and educated personnel who might otherwise be lost to the profession.

I have attempted to bring to you the need for recruitment, the fundamental knowledge necessary for recruitment and the avenues open to recruitment, as it applies to the potential dental hygiene stu-

dent. I have also attempted to point out the needs for re-recruitment of previously trained and educate dental hygienists, and I have attempted to outline the solution to some of the problems facing us. Recruitment is of vital concern to our profession and we hope of concern to the dental profession as well. Our schools of dental hygiene are constantly reviewing the problem, for it is essential that the standards of recruitment be maintained sufficiently high to insure the continued matriculation of professionally and academically qualified young women.

The Dentist's Responsibility in Recruitment

FRANK P. BOWYER, JR., D.D.S.

Knoxville, Tenn.

EDITOR'S NOTE: Dr. Bowyer is a graduate of the College of Dentistry of the University of Tennessee. He limits his practice to orthodontics and finds time to devote to dental organization matters and community interests.

He is a Past-President of the Southern Society of Orthodontists and is presently serving on the American Board of Orthodontics. He has been active in developing state and community programs for cleft palate rehabilitation and speech and hearing, in Tennessee, and is now serving as President of the East Tennessee Hearing and Speech Center. His many community interests won him the Distinguished Service Award of the United States Junior Chamber of Commerce in 1952 as the Young Man of the Year.

Dr. Bowyer's continued interest in recruitment for dentistry over many years is recognized by the number of young men and women he has influenced to pursue a career in dentistry.

IN 1956, THE Recruitment Committee of the American College of Dentists sent out a questionnaire to the dental colleges in the United States and Canada.

It asked four basic questions:

1) Do you find good applicants for the study of dentistry plentiful? 2) Should effort be made to interest desirable persons? 3) Should guidance plans be developed? 4) Would motivation studies help in selection? Replies were received from 35 dental colleges in the United States and 4 in Canada. Over 50 per cent of the schools indicated that good applicants for the study of dentistry are not plentiful. Seventy-five per cent of the schools felt that an effort should be made to

interest desirable persons in a career in dentistry. Almost a hundred per cent agreed that guidance plans should be developed at both high school and college levels. Almost all agreed that studies in motivation for the practice of dentistry would be helpful, not only in the development of plans for guidance to dentistry, but also in the elimination of undesirable persons from the dental field.

From the results of this questionnaire and other factual information, it is evident that there definitely is a need for a well planned recruitment program in dentistry. It is now my privilege to present to you a brief outline of some of the responsibilities of the dentist in a recruitment program.

First, let us accept this basic fact: for every *privilege* and *opportunity* we enjoy, we have equal *responsibilities*. Certainly it is a *privilege* to be a dentist, and we are awarded *opportunities* just as great as our individual capabilities will allow or assist us. Therefore, we certainly have great *responsibilities* to our profession, and to the public.

Generally, these responsibilities encompass two areas—the present and the future. We today are definitely responsible for the future of our profession. Our primary responsibility in this regard lies in the field of student recruitment. If we encourage and guide into our profession sufficient numbers of young men and women of proper caliber, the future is assured. If we fail to do so, we have failed in 50 per cent of our obligation to our profession and the public.

To aid us in the obligation of recruitment, let us remember that the success of recruitment for the future will be in direct proportion to the manner in which we fulfill our obligations of the present. To adequately meet our obligations of the present, we must plan and activate a personal program of continuing education which will constantly improve our knowledge and skill and service to our patients. To be a well rounded program, this must include self-education in the fields of *philosophy* and *art* as well as *science*.

There are very few individuals who enjoy more privileges in a community than a dentist. Therefore, there are very few with more responsibility to the community. Consequently, in addition to our professional services, we should go forth and seek ways that we may make contributions to the over-all welfare of our respective communities. "He who waits until he is asked, has waited far too long." I am sure you will find that the public rarely begrudges a man's personal success if he is appreciative and considerate of those to whom he owes his success. If you hope to enjoy real success, you must lend your abilities to the community that awards you that success. It is not enough to render a good professional service within your office. You cannot be content to look at the world through a mouth mirror. If you want a good place in which to live and practice, to educate and raise your family, you must do your part as a well educated, intelligent citizen. I like to see a man proud of the place in which he lives, and live in it so the place will be proud of him. There is no better way to interest capable young men in your profession.

Remember also the personal opinion your community has of you

as a man or woman, husband or wife, father or mother, is vitally important, not just to you personally, but to the profession you represent. You are constantly on the spot, your every action is observed by someone in your community. Therefore, it is quite essential that you live your public life and private life in a manner that demands respect for you and your profession and offers encouragement to the youth of your community.

We can be justly proud of our present day scientific and technical status and the humanitarian benefits afforded by our profession. However, our pride must be tempered with humility. We must have a sincere desire to better utilize our skills and knowledge in service to our fellow man. No matter how much knowledge or skill we possess, it is the manner in which we use it that is so important today. This is public relations and public relations is the key to our present and future status. Yes, in the final analysis it is good public relations that will attract desirable young people and control the destiny of dentistry.

As I see this problem today, this activity must be coordinated and carried on at several levels. On the national level, the College Recruitment Committee must conduct certain specific projects, the results of which will be of value to the Sections in their activity.

At the Section level, a program must be established that will carry this activity to the community level, for it is here that real beneficial productive action must be taken. This means that if we are ever to have a recruitment program of any real value, it will require the interest and action of every individual College member in his home community. However, he must be given the tools with which to work by his Section and the College Recruitment Committee.

Actually, to be most effective, our program must involve all dentists. Therefore, it behooves us to stimulate increased interest of the American Dental Association and of each State Dental Association in this important problem. We must try to get some specific action projected down to the District Dental Society level. Perhaps this could be done by establishing in each state a committee composed of a dentist from each district who in turn would serve as chairman of a district committee to work on the problem at the grass roots level.

In each area the problem will be somewhat different, but there are certain basic facts to be recognized. We must interest youth at the high school level, preferably we should reach the freshman student. We cannot wait until the last week of his senior year to ap-

proach him about his professional career. By this time, the better students have selected their careers. Also, we must remember that curriculum planning for dentistry must start with the eleventh grade. Guidance counselors and other advisors as well as parents must be made aware of this fact. Also, at this point parents should be made aware of the financial and other responsibilities they are undertaking.

The possibilities of a dental society committee or individual effort do not stop with the guidance programs in our high schools. There is a great deal that can be done for the pre-dental student after he enters the university or college.

In interviews with pre-dental students, I found that many of them were completely lost. Many of them didn't know just why they had chosen dentistry. Many of them had no ideas of what to expect from the profession of dentistry, and very few of them had any idea what responsibilities they were assuming in the profession itself or as a citizen in the communities in which they would live.

The students with whom I talked, as well as several university and college administrators all agreed that the pre-dental student needs orientation and encouragement, and it would be most welcome and helpful if a group of the men in private practice would participate in some activity to assist the pre-dental students. One good suggestion received was to organize the pre-dental students into Pre-Dental Clubs, and sponsor meetings at least once each quarter (more often if possible) at which time the boys could discuss problems with each other and with advisers from the local dental society.

To reach these youths at either the high school or college level, we have three basic approaches: (A) personal contact; (B) printed material; (C) movies. We are all familiar with the booklet "Careers in Dentistry," published and distributed by the Council on Dental Education of the American Dental Association. We are also familiar with the splendid movie filmed by the Student Recruitment Committee of the College several years ago, and of course there are other printed material and movies available which can be used to a definite advantage in a student recruitment program. Although printed materials and movies can be quite helpful as aids, to be most effective they must be utilized by an interested individual practicing dentist. Personal contact by a dentist is unquestionably our best recruitment tool.

Perhaps you are aware that the College Recruitment Committee

is planning a national level study in motivation. When this study is completed, the findings will certainly be most helpful in any program of student recruitment. It could also prove helpful by improving present procedures in the selection of dental students and will bring attention to those areas in which attitudinal orientation is the best direction for the profession to be emphasized.

As we recruit young men and women for our profession, let us remember that there are certain qualities of personality and character which are equally important as manual dexterity and scholarship. Let us search for young men who possess intellectual curiosity, flexibility, emotional maturity, a sense of humor, tact, tolerance, self control, dependability and honesty, organizational ability, resourcefulness and accuracy, good common sense; a neat appearing person in good health who, above all else, has moral and intellectual integrity and a deep sense of sincerity and honesty. The future status of the dental profession is largely determined by the care and intelligence used in the selection of our successors for personality and character as well as for their manual dexterity and scholastic ability. "Silver whistles have never yet been made out of pigs' tails or a silk purse from a sow's ear."

The science of dentistry is still in its infancy. It was born 118 years ago in Baltimore—groping at first in the mists and shadows of experimental uncertainty; it has enlarged into the clearer atmosphere of a brighter dawn—where its achievements are penetrating the clouds and spreading sunshine over the hearts and minds of man. A small band of noble men in the beginning, it has swept across the horizon until today it embraces many earnest practitioners and an ever increasing interest on the part of the public at large.

Out of the chaos of the past, the doubt, dread and despair—has come this beneficent science to bring solace to the sons of men—*and the end is not yet*. There are greater achievements ahead. And the future holds high the banner of promise.

When the possibilities and significance of dentistry are fully recognized by the world, there shall be recorded one of the greatest achievements and greatest tributes that have ever fallen to any profession.

For the many privileges and opportunities that are ours as a dentist and a respected citizen in our communities, let us assume one of our greatest responsibilities, which is to encourage and guide into

our profession young men who manifest high professional potential. We must not sit idly by and let the increasing public need and demand for dentistry bring into our profession individuals who do not possess the basic qualifications of true professional personnel. Yes, we are the ones responsible to our profession and to the public for the next generation of dentists. Let us fulfill this obligation with serious determination.

Aptitude Testing in Relation to a Professional Career

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Atlanta, Ga.

EDITOR'S NOTE: *Dr. Buhler is a graduate of Indiana University School of Dentistry. Upon graduation he became associated with the school as a member of the faculty. He continued his interest in teaching at Temple University, Philadelphia and Emory University, Atlanta, Ga., where he is Dean of the School of Dentistry. He is a Past-President of the American Association of Dental Schools, which organization he also served for four years as Secretary-Treasurer.*

Dr. Buhler is presently a member of the Council on Dental Education of the American Dental Association.

and makes available on a regular basis, but as a school administrator and, therefore, as one who must face this matter of admissions squarely during each year, I am compelled to observe that while we are all gratified that the total numbers of students annually making application for admission during the past several years very considerably exceeds our experiences in prior years, we cannot help but be hopeful that the academic quality of those who will be applying for admission to dental school during the years ahead will improve significantly. This is not to suggest, however, that I am not pleased with the overall quality of the students whom we are admitting to dental study today. The quality of our students has regularly improved and by now far exceeds the quality of students during my own day in dental school and during many of the succeeding years.

It is misleading, however, to report without benefit of explanation that only one out of five who apply for admission to dental school can get in. Most dental school administrators will report that they have no difficulty in selecting the first 50 to 75 per cent of their classes but that thereafter the decisions become increasingly difficult and the admissions committees are obliged to fill the remaining

THOSE WHO HAVE preceded me on this program, have emphasized the need for an effective program of recruitment and have borne witness to the degree to which such a need exists. That there is developing an increasing interest among young people in dentistry as a career is abundantly apparent from the data which the Council on Dental Education of the American Dental Association accumulates, analyzes

places in the classes by admitting applicants whose academic preparation and aptitude test scores leave something to be desired. At this point, the admissions committees operate with tongue-in-cheek as they accept some of the applicants whom they doubt will be able to meet the requirements of the dental curriculum.

If, then, the recruitment programs for which we are hopeful and which are so seriously needed are effective in attracting greater numbers of qualified students to study dentistry, it will become increasingly important that we be able to apply systems of measurement and evaluation in order that we can better identify those students who are most likely to be competent in meeting the requirements of the advancing curriculum in dentistry.

Dentistry has made some significant strides in this direction, for over the past twenty years much progress has been realized in devising means by which the dental schools could evaluate the competencies and the aptitudes of those who apply for admission. Especially effective has been the aptitude testing program conducted by the Council on Dental Education of the American Dental Association. This battery of tests became available to the dental schools beginning in the fall of 1950. The battery was not released to the schools for general use until its validity had been demonstrated through data obtained over more than five years of experimental use. Although Doctor Shailer Peterson who is currently the Secretary of the Council on Dental Education developed the battery with a personal background of broad experience and scientific knowledge in the field of educational measurements, he was not content to "go-it-alone"; for over the years he has enlisted the services of consultants who are also specialists in the field of educational measurements. In addition, the Council has also had the benefit of the experiences of the schools of dentistry, especially those schools which have been the most active and the most interested in meeting some of the problems concerned with admission. The aptitude tests have proven to be exceedingly valuable instruments in the conduct of a sound admissions program and many of the dental schools would be hard-put if they were to find themselves without the benefit of this aid to evaluation.

Two other exceedingly important factors in predicting success with any undertaking are factors which thus far cannot be separately identified and measured and these are the factors of motivation and interest. All of us who have been associated with education over any

period of time and have had the opportunity to examine, can point to students whose general level of ability certainly did not equal that which one would usually expect to find among the successful students enrolled in a school but who because of strong and sincere motivation, together with tireless effort, were able to make respectable records for themselves in an area for which they felt a particular affection and interest. By the same token, we can also identify certain students, whose natural competencies and aptitudes were of a superior order but who, lacking either interest or motivation or both, made miserable failures of themselves. These two extremes are not the routine experiences, but, rare as they are, they are the ones which give us the most trouble. The parents and/or other sponsors of students whose records clearly demonstrate that if they were to be admitted to dental study they would likely prove to be failures, place great emphasis upon some person whom they have known who, although not noted for the excellence of his college record, was somehow able to graduate and later became reasonably "successful" in a material sort of way. With these recitations we take no issue, except that we cannot accept the premise that there is some dependable substitute for brains. College and professional school records prove irrefutably that the young man who has a good college record will by-and-large produce a good record in the school of dentistry and, following his graduation, will become a leader in the profession either in practice, in research, or in teaching. To this observation there is no argument, for the record speaks for itself. This observation is not derived from isolated or occasional incidents but is the routine, standard experience which all of us in the dental schools can demonstrate. Why is this so? Because in the final analysis not only is the college record measuring intellectual capacity, but it is at the same time measuring that vitally important factor—motivation. A student with a high intellectual capacity who is not motivated will produce no better record—and may even produce a much poorer record—than will a student of average intellectual ability but who is strongly motivated and dedicated to his objective.

There are some aspects of the dental aptitude tests which ought to be explained if their usefulness and proper place in selecting students is to be understood and appreciated. First of all, it should be made clear that an applicant does not "pass" an aptitude test any more than a youngster enrolled in an elementary school "passes" the

achievement tests which are routinely given. The Dental Aptitude Tests are nothing more than reasonably reliable measurements of just what the name says: they measure aptitudes. That is all they do. The results of the performances on these aptitude tests are not reported to the schools in the form of grades as are the results of classroom, laboratory, or clinical endeavors, but, rather, they are reported in the form of *scores* which relate the performance of the applicant to the performance of all other applicants who took the same test. These scores range from a high of 9 to a low of 0 as they are reported by the Council on Dental Education. I like to think of the aptitude tests as being useful in evaluating applicants for admission much in the same way that x-ray is useful in making a diagnosis. One does not make a diagnosis by the use of x-ray examination alone and, generally speaking, the most important part of an examination is the clinical examination with the x-ray serving only as a valuable supplement. The aptitude test is a valuable supplement to the college record in diagnosing competency in meeting the requirements of the dental curriculum.

Much has been written concerning aptitude testing and the usefulness of aptitude tests in predicting which of the potential aspirants to dental study will be successful and which will not be successful. Even more than the writings on the subject, unfortunately, there has been much too much unfounded and uninformed talking about the tests. Unfortunately, too much of what has been said against the tests has been derived out of a lack of understanding of the nature and limitations of the aptitude tests and out of a lack of knowing how to use test scores. It is a fallacy, for example, to attempt to apply aptitude tests in exactly the same way in each of the schools. The Council on Dental Education has supplied some exceedingly interesting and scientifically accurate data on the *national*, overall usefulness of the aptitude tests as an aid in predicting the performance of students. Although one does not dispute the scientific accuracy of these overall data, one certainly should never attempt to force their use at the local level without qualification. It has not been the intention of the Council on Dental Education that the tests should be used in this way. At the local level, each school must determine for itself the manner in which the test scores can be most useful at that particular school. The manner in which we find the tests useful at Emory, for example, I would venture to say might not be at all useful elsewhere.

TABLE I
CORRELATION OF DENTAL SCHOOL PERFORMANCE WITH
DENTAL APTITUDE TEST SCORES FOR THOSE STUDENTS WHO
WERE ADMITTED AND WHO HAD TWO OR MORE
TEST SCORES OF 5 OR HIGHER

(1) <i>Freshman Class Beginning In the Fall of</i>	(2) <i>Total New Students Starting</i>	(3) <i>Total With Two or More Aptitude Test Scores of 5 Or Higher</i>		(4) <i>Total Students In Column (3) Who Were In Upper 10 of Graduation Class</i>		(5) <i>Total Students In Column (3) Who Were in Lower 10 of Graduation Class</i>		<i>Total Students Graduated</i>
		(A)	(B)	(A)	(B)	(A)	(B)	
		NO.	%	NO.	%	NO.	%	
1950	80	45	59.6	9	90	3	30	76
1951	79	54	68.3	9	90	4	40	74
1952	78	51	65.4	9	90	5	50	72
1953	78	40	51.3	6	60	3	30	66
1954	78	56	70.8	10	100	5	50	63
TOTALS	393	246	62.6	43	86	20	40	351

Each school must carefully analyze the results and the correlations which are derived therefrom and only by this procedure can the school derive in full, the benefits which are inherent in the battery.

For practical purposes—in this brief paper, it must suffice to give you the experience of but one school and to give you this experience in a simple way which I believe demonstrates without reservation that the aptitude tests are effective and explains why we at Emory University regard them as one of the valuable instruments which we have used over a period of ten years in selecting and admitting students.

When the specialists in this field report on their work, however, they sometimes submit their data in such a way as to leave most of us ordinary people in a state of confusion and without the degree of understanding and appreciation which we ought to have. With this in mind, I sought for a way of reporting effectively, and I believe that I can demonstrate to this group here today through the simplest of data that the aptitude test is a device which can be used at the college level in effectively predicting those who likely will do well in dentistry, and it can also predict those who might not do well. I

TABLE II
CORRELATION OF APTITUDE TEST SCORES WITH PERFORMANCE
FOR THOSE STUDENTS WHO WERE (1) DROPPED FOR POOR
SCHOLARSHIP, (2) REQUIRED TO REPEAT A YEAR BUT WERE
ULTIMATELY GRADUATED, OR WHO (3) WITHDREW FROM
ENROLLMENT WITH POOR SCHOLARSHIP

<i>Freshman Class Beginning In the Fall of</i>	<i>Total Students Dropped During 4 Years</i>		<i>Total Students Who Repeated a Year But Were Graduated</i>		<i>Total Students Who Withdrew With Poor Scholarship</i>		<i>Withdrew For Illness or Deceased</i>
	*	**	*	**	*	**	
1950	1	3	4	2	0	1	0
1951	1	1	5	4	0	0	0
1952	3	3	2	2	1	1	0
1953	3	5	3	3	0	2	2
1954	1	2	7	6	1	2	1
TOTALS	No.	9	14	21	17	2	6
	%	39	60	56	44	25	75

* Those students who had 2 or more scores of 5 or higher on aptitude tests.

** Those students who had less than 2 scores of 5 or higher.

am anxious that the merits of these tests be appreciated broadly, for the program needs to be better understood and deserves the support of dentists, high school teachers and college folks, alike.

At Emory, out of 393 new students who were admitted to five freshman classes in our school during the period 1950 through 1954, there were 246, or 62.6 per cent, who had scores of 5 or higher in two or more of the four tests in Biology, Chemistry, Object Visualization and Carving. The top score which can be earned is 9 and the lowest one is 0. Using the tests in the individual manner which I urged earlier in this paper, we have found at our school that the predictive value of the scores earned in the Biology, the Chemistry, the Object Visualization, and the Carving portions of the battery so far exceeds the predictive values of scores in the other areas that we have simplified and made our procedure more effective by utilizing only the scores in these particular areas.

At graduation we found that of the top ten students in each of the classes, 86 per cent of them had scored 5 or better on two or more of the four tests mentioned. By contrast, only 40 per cent of those with

two or more scores of 5 or better were among the bottom ten in the class. We found that in three of the classes, nine of the top ten students were among those who had earned two or more scores of 5 or higher, but that in those same classes, the bottom ten students averaged having only four who had earned such scores.

The validity of these tests can be demonstrated in another way and that is by relating the test scores to those students who because of poor scholarship were dropped from the enrollment, were obliged to repeat one of the years, or who voluntarily withdrew from enrollment. During the same five-year period, 1950 through 1954, out of twenty-three students who were dropped for poor scholarship, only nine, or 39 per cent of them, had two scores of 5 or better, while 60 per cent (14) did not have scores of this quality. Of the thirty-eight students who were obliged to repeat a year but who were subsequently graduated, twenty-one of them, or 56 per cent, had two or more scores of 5 or better, while only seventeen, or 44 per cent, had lesser scores. Of the eight students who withdrew because they were doing so poorly, two, or 25 per cent, had two scores of 5 or better, while six or 75 per cent, did not have such scores.

It seems to me that this is pretty conclusive evidence that the tests are amazingly accurate instruments for predicting, especially when one appreciates that those being tested are all of a reasonably high intellectual group and that the spread of ability is narrowed within the upper limits of ability among college students, and this factor makes predicting an increasingly difficult objective.

I want to emphasize again, that none of the observations which have been made here relative to the aptitude tests have brought into focus the weight which must be applied to the college record—that is, the pre-professional record earned in the liberal arts college. By all odds, this record is the one greatest, single predictor of success and of competency which the dental schools have to measure the aptitudes and the competency of applicants for admission.

In the years ahead and as the numbers of applications for admission to dental school increase—and as the results of recruitment programs become increasingly effective—we will more and more need to rely on aptitude tests as supplements to the college record and as aids to committees and individuals who are concerned with admission to dental schools. The dental profession in this country can be proud and grateful for the part which the Council on Dental Education has

played—and is playing—in this field. Dentistry—through the Council—has very wisely, I feel, retained this testing program as a function under its own purview and has not permitted it to become identified with a commercial testing service. I am personally convinced that this has been a sound procedure and in a large measure has contributed to the effectiveness and the success of the program.

In conclusion, I say again that aptitude testing is an effective aid but one which must be constantly studied and improved to the end that it becomes increasingly useful in serving our needs as recruitment programs are developed and become effective and as greater numbers of young people look to careers in the profession of dentistry.

Some Factors That Influence Recruitment

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WHEN YOU GET into a dental study such as the one we are doing for the American College of Dentists you become so involved you are not quite sure whether you are still a head shrinker, a witch doctor, or if you have become transformed and are a dentist.

Nicholson-Kohn and Associates, Inc., under contract with

and under the leadership of the American College of Dentists, has been studying freshmen dental students, those students beginning their dental training in the academic year 1958-59.

The basic purpose of this study has been to survey the motivation, background, interests and nature of all entering freshmen in dentistry to gain insight into some of the problems of selection, recruitment and development for the dental profession. This is a particularly pressing problem at this time because of the enormously increasing demands from the general public for dental services and prospects for further increase from this source in the future.

The method used in the major study with which we are concerned involved the distribution to all of the schools of dentistry in the country of a long questionnaire—123 items. These items were distributed into the following three major groups:

1. The factors of background, cultural, occupational, sociological, familial.
2. The factors that are involved in vocational choice, including motivation.
3. Basic personality data. Perhaps this was as long as any other section—a tremendous number of items on a subjective basis having to do with personality, maturation, attitude of the individual towards the profession, toward themselves, toward society.

I am happy to say that, as of this evening, we have responses from

100 per cent of all of the schools in the United States and Canada. You will also be interested in the fact that all questionnaires were returned with the exception of one-half of one class. In other words, and this is not quite accurate, if there had been 3,850 questionnaires sent out, our response then would be over 3,610. Illness, absenteeism and early drop-outs were the only people missed.

Within the last nine months, Dental Schools on at least twenty campuses have been visited. Dr. More and myself have talked to about one-third of all dental freshmen and, in addition, to an approximately 10 per cent of all senior dental students in the country. On many of these campuses we met with the faculty as a whole and, in all instances, talked to some of the faculty. Along with this, we have been doing correlated studies on a small basis which include a brief questionnaire to qualified college counselors in 300 major schools, a still smaller sample of the high school counselors, some investigation of the attitudes and professional dental training of approximately 200 teachers of science in major colleges, and some individual as well as group contact with approximately 500 pre-dental students in twelve different colleges and universities.

Our technique during visits to the schools involved talking with groups of five students in a reflective type group interview during which we told them what our interests were, but did not ask questions. Their remarks were reflected and interaction with the group was stimulated. This dynamic interaction leads to a wealth of information and feeling. Some people were individually interviewed, a few in depth (that is, two to four hours using permissive methods).

All of these data have been recorded for each individual participating and added to the individual record of the student. We have taken the cultural, occupational and family background data and put them on one IBM card involving 80 columns. We have taken certain elements of the reasons why they took dentistry and certain directions in their thinking which could be tabulated in a statistical way using certain statistical techniques even though they were subjective questions, and tabulated into a second deck. So that means we have 160 columns of IBM data on every individual. We then have set up a clinical procedure for the inter-analysis of competent clinical psychologists. The procedure involves analysis by five independent examiners of approximately one-third of the cases on which we have the most information. These will be done first as a case study, then

the common elements will be analyzed and, to the extent that the data will justify, these will be statistically analyzed.

Studies of this kind lose value unless the information is made available quickly. However, doing this requires a great deal of time and work. Over 650 hours of IBM machine time will be needed just to "mine" the data punched on the two decks of IBM cards described above. Still further time is demanded to write up and interpret each section of those results as they become available. Not only must we tabulate the items, but we must study correlations between factors for the nation as a whole and possible variations between the major regions. Results on the social and cultural background of these students will be presented in 1959. A study of basic motivations to enter dentistry is being completed now and will be ready for publication at the same time. These two studies, for example, in fact only scratch the surface, since they probably represent less than 10 per cent of the information available. We mention these aspects of our work now so as to request your understanding patience in case you do not get results back from us as rapidly as hoped.

We will find many things of general interest to the profession of dentistry, to other professions, and we think to the public as a whole. In our opinion, and I believe you will agree when you are able to see more of the study, one of the primary problems we face is the fact we are not getting an adequate number of qualified students to apply to schools of dentistry. Maybe you shouldn't put things on the table quite so frankly but I don't think you can interview, look at results, talk to the deans in these various places without wanting to say this. The problem is one which is also facing medicine. To a lesser extent, it is also a problem of the other professions. This problem is getting more serious because of:

1. The costs of dental school.
2. The absence of many good scholarships.
3. The costs involved in setting up a dental practice.
4. Communications and contacts with the schools of liberal arts, the teachers and counselors, being inadequate.

We believe it could be established, not as a result of our study but as a result of other statistics available, that there are enough young people who have potential interests making a B average in college, who would be good candidates for dental schools to fill the entire complement of students if we communicate to the counselors, the students, the teachers and to the appropriate people.

A study done recently at the University of Maryland with public funds (as yet unpublished) indicates a large proportion of high academic ability students are unable to find occupations they want to go into and still remain in scientific work or in the sciences. There are young people who do not particularly want engineering but who are not interested in something quite as abstract as pure science research and a PhD. in the respective sciences. It is interesting to note this is particularly true of those young people who have, correlated with this capacity and interest, an ability and interest in the use of their hands. We have here a major problem of recruitment.

This problem of recruitment unfortunately is not as simple as just getting our story told. We have the problem of the attitude of the counselor himself, of the teacher, toward dentistry. We have the attitude that the student has gotten in his own home community toward dentistry. Incidentally and parenthetically, *I think this study will show conclusively that the most important thing influencing a young person into dentistry is a good dentist.* But unfortunately, if we had stopped our study with these particular cards I told you about, we would have almost only that to show. But in broadening our study to look at some of the people who did not come into dentistry who were qualified, *we find that perhaps the greatest negative influence was dentists.* Probably no other profession has quite as clean a split. Dentists either seem to be able to interest and encourage tremendously or else be able to discourage and dishearten young people completely.

It is interesting to note that quite a few of the students in dentistry had come to dentistry in spite of some tension and feeling between medicine and dentistry because, in part, a physician had also recommended dentistry.

One of the most interesting sidelights of our study will be the relatively small sample, but quite significant sample, of students talked to who had considered dentistry, who had fine grades, but who had decided not to enter a school of dentistry. These facts concerning why students come are important but perhaps even more important is the necessity to analyze some of the factors related to their own personal motivation. Students think of dentistry as desirable because:

1. It offers a secure income.
2. Independence. "I want to be my own boss," "I worked for so-and-so and I didn't like it."

3. Status in the community. As a matter of fact, in talking to seniors we found that it is possible a good deal of the migration of young people to different parts of the country may be as closely related to what they think the status of dentistry is in that area as to what they think their pay may be. We find that the areas which have trouble in getting and attracting and keeping dentists, as far as the seniors are concerned, are those in which they feel the community will not appreciate them nor give them status, whether their economic stipend is adequate or not.

4. The fact that there is responsibility, but limited responsibility.

5. Control of hours worked. Dentists are not at the mercy of the patient.

6. Opportunity to use the hands.

7. Opportunity to work with people.

The above are not necessarily in the right order but they all bear considerable weight.

It is relatively frightening to report how very few have mentioned interest in research, especially from the point of view of giving service. In terms of the number interested in service in a general sense, we found that schools in the Midwest had by far the greatest number reporting an interest in service to their fellow man and a desire to contribute to the happiness and welfare of other people. We found the East Coast and the Southeast significantly lacking in reporting, listing or discussing this kind of an issue and we found the West Coast schools good but probably statistically significantly below the Midwest in terms of their attitude toward service. We found the average freshman, either the first week of school when we saw some or even after three months, not feeling that he understands what dentistry is, a little disturbed as to whether he has made a wise choice, a little fearful of what is going to happen to him. There are many more statistics like this which may interest you in the future as we get more of this done.

The proportion of students who are married in dental schools was the highest proportion of any professional school and by a big percentage. Those who are not married, on the whole, are not averse to finding a woman who can support them. A few students, however, told us they would get married when they "got caught."

One of the big problems that we face is the fact that, as schools have had fewer good applicants to choose from as the rate of veterans went down, at least some schools compromised and took students whose academic ability is, let us say, at the C level and maybe from an outstanding school. I would like to point out to you a pattern we find in many, many situations. The upper one-third of dental students

are Phi Beta Kappa level with outstanding potential. The middle one-third, even if their grades are not tremendous, show some real inherent capacity and some of them with good grades. At the bottom there is another one-third low enough that they must come through on energy, intestinal fortitude and persistence. What happens to an instructor teaching a class like this is, in general, that since he cannot flunk a third of the students, he tends to downgrade his teaching some, and when he downgrades his teaching he destroys the drive and interest of the people you most want to interest and contain. In turn, their enthusiasm as expressed toward students who are still taking undergraduate work is immediately dampened. We found this was one of the things that is being said by high-ability people to other high-ability people they know from their home towns who are just a year or two behind them.

Dentistry faces a problem of identification, professional definition. This professional definition toward which the profession is growing will be determined by the caliber of the people who come into dentistry now and in the immediate future. One of the things we have to face is the fact that the average age of dentists in the country is probably over 50. I would like to cite the condition in Minnesota where the average age of dentists at this time is 58 plus. One-half of the dentists in the state of Minnesota will in all probability not be in practice in ten years. These statistics, although extreme, are not tremendously different from many other states. At the present rate of production of dentists in the state of Minnesota, the ratio of dentists to people in the state will go from 1 to 1,700 to 1 to 3,200 within six years, if they do not lose any of the students they train and if one out of three Minnesota students that go elsewhere to school come back to the state. But they are presently losing almost one-half of those they train. This, you see, is a serious situation for the profession. It is a kind of vacuum into which unethical procedures can come. It is the kind of situation in which people sometimes can be encouraged to downgrade a profession in order to gain practitioners rather than upgrade for the necessary services and the increasing knowledge we have of the ways in which dentistry can contribute to the individual person and to the health of the total community.

Since we traveled into the South, East, North and West Coast, I think we secured a fairly representative sample. We were in 20 of the 53 schools. It is true we neglected to get into the Negro schools and

perhaps there are some other faults in the sampling we chose, but basically I think it is a large enough number of contacts to be significant, especially as we have the questionnaires to back this up.

We further found that a significant group of the students we interviewed now in dental school developed an active interest in dentistry somewhere between the Seventh and Tenth grades. But of this one-fifth, eighty per cent, four out of five, had been discouraged by teachers, ministers, parents or dentists and had temporarily dropped it only to return to it either for negative or positive reasons, some time during the period six months before they entered dental school. There seem to be certain forces, which we also can confirm in working with counselors, that are working against having many people who might have genuine interest in dentistry become interested in following through on their professional plans. Many counselors today do not feel some of the professions are good for young people. They feel it postpones marriage and we have a prejudice here. Many counselors feel that dentistry talks about having an oversupply of applicants and then takes people whom they as counselors do not respect academically. As a result, counselors can lose interest in working with the dental school.

Incidentally, out of 300 schools we sampled with counselors, all of the counselors we sampled were fully professional. That is, they had a Ph.D., five years of clinical experience, and they had had experience supervising other counselors. We received a complete return from these 300 schools. And we have over 70 per cent who are free to admit, both on the questionnaire and in an interview, to some systematic bias against considering dentistry as a first choice for almost any individual. Counselors make such comments as, "If you are good enough for dentistry, you should not compromise but should probably try for medicine." The counselors made many comments that reflected a number of them have bias. This problem is a complex and a serious one. It is going to require careful analysis and a persistent program over a number of years to solve or minimize. Very few counselors will tell you their feelings when they realize that you are a dentist. If you encourage them to tell you what they encourage high ability students to do and why, they make these suggestions and some of their feelings become quite clear by implication.

Now, I would like to try to answer briefly your questions concerning the study.

Q.: What do we do as a profession to get counselors to recognize the benefits of dentistry?

A.: I believe there are quite a few things that can be done. One is to have panels of dentists available to the schools but not alone to have these dentists available but to write for them a standard operating procedure of what they should do and how they should do it in contact with the schools or a young person. The kind of thing to say or not to say. Dentists, like other professional people, tend with the best intent to either over-sell or under-sell their profession just because they haven't been trained as to how to present their case. A little four page brochure we could prepare in an hour or two should help us to feel more secure and many more fellows would be willing to participate if they knew exactly what was expected of them.

Secondly, the practicing dentist, no matter how interested, cannot possibly know all of the requirements that may be necessary and so we should have a second, simple brochure which he can read quickly that will tell him the exact requirements so that what he says is correct and is no misinterpretation.

Thirdly, the American Dental Association and others have some good materials. Where possible, these should be made available to go with him to be distributed. Fourth, those schools which in addition to Career Day allow students to go out and visit professions, should be encouraged to send students to us. There is so much to be learned in a dentist's office. There is so much more to inspire and interest young people there than in most any other office. Fifth, it seems to me we must be willing to take the time once in a while to take out to lunch on our own, because we are interested in the profession, some counselor at college or a high school counselor. You'll find they are pretty swell guys even if they are a little prejudiced against us. And they need the contact with reality about a profession that we can bring them. These are a few things and they are simple things. And I do not think actually that we have to get high-falutin' or out in left field to do something. I think the wonderful part about this is that most of what we need to accomplish can be accomplished by grass roots people at elementary levels without spending a lot of time or money.

But consistent with this, I think we must face one other fact. I have become perhaps a zealot, maybe more of a fanatic than you all are, about the needs of dental education and if we are going to work on

recruitment as a profession we are going to have to accept similar responsibility to be sure the schools of dentistry have the resources that are necessary to train these people properly. There is almost no major school on campuses which have had as little endowment, as little attention, and as little support, as dentistry. I would like to think there are going to be some rich people in the community who are all of a sudden going to endow us. But the record doesn't show that this is necessarily going to happen. I am amazed frequently at what physicians are able to do to influence their patients to be interested in medical school. Yet, in my experience, dentists are (1) more verbal (2) more convincing (3) more social, and (4) generally, are more willing to find out more about what they are talking about. If this is true then, it seems to me we are going to have to take the responsibility both personally and in terms of the people with whom we have contact and the organizations we have contact with in the community in which we live to begin to underwrite in significant ways, even if we have to sacrifice some, our dental education. If the profession were to become sold tomorrow that this was necessary, I don't have one doubt whatsoever that the community would begin to back us up because this has been the history of every other school where major backing has finally been developed. I think these two things hang together.

Q.: Your investigation is very interesting from one end of the spectrum. But I am constantly thinking about the other end. You mentioned the counseling, for example. I learned recently of a Foundation which gave many millions of dollars to a medical school so they could look for diseases which haven't been cured. Haven't we been delinquent in not making some of the Foundations and health funds aware of the need within the dental area for research and education and, if we had gotten this money for research, might we not have by this very process become more prominent and interested more counselors and others in us?

A.: Yes, we have been negligent, I think. But I think so of other professions and would not want to pick on us, alone. But you see in part it goes back to our concept of what the role of the dentist is in society. And if we conceive of the dentist as a whole person, I mean dealing with whole people, and that what happens in their mouth affects their entire being, and if we are willing to put forth our research and our requests on this basis, we can have some access to this

money. But if we belittle ourselves and limit ourselves, these Foundations will do the same. I don't think we are easily going to get Foundation money because of the competition for it now being very keen. But if individual dentists will serve on an increasing number of these boards when public health is involved, not just when we are automatically put on by the government but as they crop up in our local community, and if we will pay attention to some of the local Foundations, I think there is not only opportunity to get some of these big things but I feel there are many local funds which can be gotten.

I believe dentistry has failed to romanticize, dramatize or develop itself (and maybe a profession shouldn't). But nevertheless we haven't. I think the absence of doing this has had its impact on us as dentists first, not to mention the young person who may be coming along or the people who may have money to donate. And I think we have a responsibility. I further think that sometimes dental faculties have made too many adjustments and demanded too little of themselves and thus have been too harried to accomplish some of the things that needed to be accomplished.

So yes, I agree with you. But I think we are not going to be able to shoot to the moon alone but shoot at these Foundations through a step-by-step, grass root process, not waiting for the lightning to strike but doing both things at once.

Q.: What effect do present socialistic trends have on the tendency of people to enter dentistry and perhaps medicine?

A.: They have more effect than you realize in keeping people out. They are of some real anxiety to some of the young people who are freshmen and seniors. (We did not talk to people in between.) The other fear they have is that someone is going to invent a drug that people can take orally and there will be no more decay. They say if they get all trained to make these fillings and someone comes up with that magic formula, then what happens? But basically, there is strong feeling on the part of these dental students if someone is to come along and tell them what to do a great deal of the attractiveness of dentistry is gone. From another standpoint, something I didn't mention before, a significant minority of these people are tremendously interested in the fact that the dentist is a creative person. What he does, whether it is cosmetic in terms of the person's appearance, or whether it is organic in the sense of enabling him to masticate and handle his food better, he is restoring or changing or perpetuating

this person from a creative standpoint. He sees it as a whole thing which he has done where he can see his own handiwork, whether good or bad. Many students feel you would lose this kind of incentive completely if we were under socialized medicine. I am not saying this is true but you would be surprised how many of them raise this in discussion.

Q.: How do we motivate people to want to give to their alma mater, what do we do to gain their interest and support, how can we be effective in doing this?

A.: Partially as a result of talks with Dr. Brandhorst, in every school I have been to I have talked to the Dean and sometimes to the groups of alumni about their situation in terms of raising money. I was amazed to find for example that the College of Physicians and Surgeons in San Francisco has a voluntary group who give according to how long they have been out of school, some give what they receive for doing a filling a month, an inlay, a bridge, or whatever it may be. I believe they now have in the neighborhood of 1,000 people contributing voluntarily on a regular basis, without any particular expenditure of money or vast organization but by having found a few interested people, by person-to-person contact, to begin doing it and then invite others to do the same thing they were doing. I think we tend in raising money, as in so many other things in our society, to talk too much and do too little. I am a great believer in not waiting until everyone does, but begin with those who have sensitivity and insight into these problems. We can learn from experience what it is that produces funds and then get those people who become involved and emotionally close to the problem each to contact some additional people within their own circle of acquaintances. This sounds easy. It is not. It is much tougher than getting out a nice letter. But it works. Now, how do you get people to do it? You only get them to do it at the point where they become involved, where they feel they have some stake, whether it is because of the service they want to give back to the profession, or whether it is because of what they still hope they can find in the profession for themselves, or whether it is in terms of their own concept of what a profession really is. Too often, we tell people what they *should* do and too seldom we listen to what they *want* to do. The best technique for drawing people into a contributing group may be the slowest one. If we sit down at lunch with our fellow members of the profession and start asking questions

about the hows and whys of feelings toward alumni support programs, it isn't long before they start to sell themselves. The person who sells himself will follow through on his commitments and will, if you can interest him, be able to convince others. Whereas if I have a terrific sales talk and I'm an aggressive guy, I may pry out of you a contribution but you don't feel so good about it the next day or next week. But if this is something which has grown up within you so that you really wanted to do it, it is a different matter. I think this involves every man thinking of his own professional definitions. I think it comes back to the schools, however, to define projects bite-size so that it isn't just a yawning cavern into which money goes and nothing ever happens. You have to split off some things, so the alumni and others can see some results, because there is nothing that encourages more giving than seeing some results of what you have already given.

Even though people may feel they are somewhat pinched economically at this time, this need not limit our campaigns. I think it is a matter of communications, stimulating interest, and reorienting our values. But above all, I think it is a matter of professional leadership. Professional leadership is that kind of stimulation that outstanding people give by example and interaction. I like this approach because as it grows you get the kind of interest from dentists which enables them in turn to approach other people they know in the community. Thus, they can obtain the kind of underwriting, not only of the services dentistry has already given, but also to make possible the services which the community really needs. Sometimes we neglect this potentiality, which we cannot reach without training more men and training them better.

Q.: Are we inhibited in our ability to get proper press releases for dentistry?

A.: Yes. But this in my opinion is not the fundamental problem here. It is one of the things we ought to do. Perhaps more fundamental would be to insure a definition of preventive dental hygiene, a definition of dental hygiene itself, and to introduce into the schools the right kind of programs on the right kind of basis with follow-up and policing by the profession to be sure young people are getting this. To me, the best promotion is to be able to reach a larger proportion of the public. The only way I can see to do this is (a) education in the schools from the elementary on up, (b) education in the chair,

constantly. Not by preaching but by explanation, just as the physician does in training a patient to avoid disease. I think we have a lot to learn about how to do this briefly. (c) I think a great deal could be done by some very bright, colorful, attractive, little throw-away brochures for use in schools and other places, that describe dentistry not as if it were a single thing which it is not and which is one of the difficulties in people's minds, but to take different specialties and different fields within dentistry and show how each one is related and what people need to do about it. One of the great things cancer has done has been to say, "Go to your doctor twice a year." We have had some of this, "Go to your dentist regularly," but we have never had the kind of thing the Metropolitan Life Insurance Company does regarding cancer on a repeated basis and for heart trouble. We have brochures published and pushed by large insurance companies and by other groups on a systematic basis. I am sure these same people, if we got the material together, would do the same thing for us. I agree we need better press relationships but this needs a broader definition as public relations.

Q.: What about women-power as a source for good recruits for dentistry?

A.: I surely am in no position to say any source should be neglected. I can say that some of the Deans have written women off to some extent because (1) they feel it is a distraction in the classroom, (2) they think men are women-centered enough, (3) they are fearful they will invest the time and money, even if the young lady can afford it or the family can, and she will get married. And some of them said to me directly, "You would have to train three to four girls to get a practicing dentist who would go on through the years." I do not know enough to evaluate this thoroughly. The only girl we interviewed was at the University of Tennessee. There were very, very few girls in this year's freshman class. I am sure there were less than 50 (there are only 129 in all undergraduate classes in the United States, Canada and Puerto Rico) and maybe that is quite high. I believe this should be explored but you do have some older faculty people on whom you are going to have to do an extensive educational job if women are going to get by that first semester. There is some very definite prejudice that I run into in discussions with faculties without ever raising the issue. So I haven't written them off by any means but think we have an internal problem if we are to fully utilize them. For the

record, the comment was made by the Dean at St. Louis University that women now, after 50 years, are eligible to attend his school and become dentists.

Q.: Did the study include part-time as well as full-time faculty people?

A.: We do not have a very good over-all sampling of faculty. To the extent that we do have one, it does include the part-time as well as full-time faculty. We find that in many situations there are conflicts between the two groups. The level of communication as to which things have what value and should be stressed is somewhat different between the two groups. I think this is an area which could very well stand an intensive study of feelings and motivations. All that our comments will amount to in this case is perhaps to define an area that needs further investigation and perhaps give some hints as to some of the things that might be investigated. I would not want to feel we had a large enough sample well enough selected so that we could say we are objective. But surely there is enough information to indicate some of the need.

Dentistry faces enough pressures, that there is very real reason for a group like yours to want to move to action. Secondly, to wait for action on mammoth programs, in my mind, is wrong. There are many elementary and simple things that we can do personally which will be effective both in recruitment and also in making our leadership felt. I would like to suggest in closing a few of the things, some of which have already been mentioned, that might be of value to bear in mind as possible programs that could be done easily by a group such as yours or others in the community.

First, it would be very easy for each of us to have a list of dental schools easily available to the young people of our area, with information requirements, to whom to write for admission, and certain other basic statistics. There are a tremendous number of young people who just flow through our offices. It would be excellent to have this. You would use it a great deal more than you realize if you did have it. Further, it would be a resource in terms of any young people referred or any schools that we visited. Second, in keeping with the program already in existence, that we try to continue to work to have dentistry included in the vocational, educational program of the appropriate schools both through Career Days, through visit days, and other techniques. One of the best devices that has been used in interesting

people in dentistry in schools has been to allow the students to write an article or a paper or a theme on dentistry. You would be surprised how many wrote a theme like this and just as I was talking about contributing money, sold themselves. To have the materials available so schools can easily have them, to get them to school libraries, is an important thing. Thirdly, consideration, as previously mentioned, in calling on counselors, being available to counselors, being available to students to come to visit in your office and talk to you about your experience in dentistry. Lastly and fourthly, in order to be able to do this well, to set up some standard procedures regarding the facts we are going to include, of attitudes and feelings we will use, so that we are consistent and will not confuse the young people. It seems to me this gives us security and accomplishes a great deal more with a young person.

We need two types of information, really. One is attitudinal and the second is factual. The attitudes of the profession of dentistry are going to be what influences the schools and what influences the young people. The dentist's feeling about his profession is going to be what defines the nature of the education we provide and, without the development of this education, the recruitment is relatively insignificant.

Committees: 1959-1960

Auxiliary Dental Service

ALLISON M. STINSON, *Chairman* 1959
FRANCIS B. VEDDER, *Vice-Chm.* 1960
BERTON E. ANDERSON 1961
EDMOND A. WILLIS 1962
JAMES E. BAUERLE 1963

By-laws

ERNEST B. PENN, *Chairman* .. 1959
HENRY A. SWANSON, *Vice-Chm.* 1960
WILEY F. SCHULTZ 1961
GERALD D. TIMMONS 1962
V. JOHN OULLIVER 1963

Conduct

WILLARD C. FLEMING, *Chm.* .. 1959
KENNETH C. PRUDEN, *Vice-Chm.* 1960
WILLIAM F. SWANSON 1961
CARLOS H. SCHOTT 1962
JOHN F. JOHNSTON 1963

Continuing Educational Effort

LESTER E. MYERS, *Chairman* .. 1959
AMBERT B. HALL, *Vice-Chm.* .. 1960
ALTON W. MOORE 1961
EDWARD J. COOKSEY 1962
EDWARD J. FORREST 1963

Education

HARRY B. MCCARTHY, *Chm.*... 1959
WALTER A. WILSON, *Vice-Chm.* 1960
WILLIAM J. SIMON 1961
DONALD A. KEYS 1962
JOHN J. TOCCHINI 1963

Financial Aid to Dental Education

CLEMENS V. RAULT, *Chairman* 1959
WM. DWIGHT CURTIS, *Vice-Chm.* 1960
RAYMOND J. NAGLE 1961
JOHN B. WILSON 1962
FRANK M. WENTZ 1963

Health Relations

DAVID W. BROCK, *Chairman* .. 1959
STANLEY A. LOVESTEDT, 1960
Vice-Chairman
FREDERICK H. BROPHY 1961
MAURICE J. HICKEY 1962
CHARLES A. WALDRON 1963

Human Relations

PERCY G. ANDERSON, *Chairman* 1959
FORREST O. MEACHAM, 1960
Vice-Chairman
BYRON W. BAILEY 1961
JOHN W. CREECH 1962

Journalism

WESLEY W. MACQUEEN, *Chm.* 1959
CHAS. A. SCRIVENER, *Vice-Chm.* 1960
ISAAC SISSMAN 1961
WILLIAM P. SCHOEN, JR. 1962
HERMAN L. HUBINGER 1963

Preventive Service

RUPERT H. GILLESPIE, *Chm.* .. 1959
ALVA S. APPLEBY, *Vice-Chm.* .. 1960
CARL J. STARK 1961
ROBERT E. DEREVERE 1962
ALBERT H. TRITHART 1963

Public Relations

ELMER EBERT, *Chairman* 1959
LELAND D. JONES, *Vice-Chm.* .. 1960
ROBERT JORDAN 1961
HARRY N. WAGNER 1962
WILLIAM R. ALSTADT 1963

Recruitment

FRANK J. HOUGHTON, *Chairman* 1959
DREXEL A. BOYD, *Vice-Chm.* .. 1960
L. WALTER BROWN, JR. 1961
DENTON J. REES 1962
KENNETH V. RANDOLPH 1963

Research

MAYNARD K. HINE, *Chairman* .. 1959
THEODORE E. FISCHER, 1960
Vice-Chairman
HOLMES T. KNIGHTON 1961
SEYMOUR J. KRESHOVER 1962
HOMER C. VAUGHAN 1963

Socio-Economics

RICHARD C. LEONARD, *Chairman* 1959
OBED H. MOEN, *Vice-Chairman* 1960
J. CLAUDE EARNEST 1961
HENRY D. COSSITT 1962
HAROLD M. KRAMER 1963

World Relations

PHILIP E. BLACKERBY, JR., *Chm.* 1959
CARL L. SEBELIUS, *Vice-Chm.* . . 1960
PAUL E. BOYLE 1961
A. RAYMOND BARALT, JR. 1962
HAROLD HILLENBRAND 1963

Nominating (1 year appointments)

SAMUEL R. PARKS, *Chairman*
EDWARD T. BUTLER
CLARENCE W. HAGAN
FRANK MIHNOS
ROBERT THOBURN

Necrology (1 year appointments)

EDGAR S. BACON, *Chairman*
EDGAR D. COOLIDGE
CHALMER LEE GEORGE

CALENDAR OF MEETINGS

CONVOCATIONS

October 16, 1960, Los Angeles, Calif.

October 15, 1961, Philadelphia, Pa.

October 28, 1962, Miami Beach, Fla.

October 13, 1963, Atlantic City, N. J.

