

JANUARY 1965

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

Dentistry in the Scientific Era

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Dental Practice—International

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Continuing Education

# the *Journal* of the American College of Dentists

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A QUARTERLY PRESENTING IDEAS IN DENTISTRY

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# Editorials

## How to Succeed on the A.D.A. Councils

Of the eight new members of the several councils of the American Dental Association elected last November at the annual session in San Francisco, seven come from the same trustee district as his predecessor. This statistical aberration is not the result of chance. It happens annually through a system of political patronage which has become an established practice among the trustees of the ADA. Each trustee seems to feel that he must preserve the existing number of council appointments from his district. To make this possible, each trustee respects the others' right to replace a retiring council member with one from the same district.

(Council members are elected by the House of Delegates of the ADA. This is a technicality. The nominations are made by the Board of Trustees. More nominations may be made from the floor. Within my memory, no such nominations have been made.)

No matter how practical this system is politically, it is not a system for placing the best possible men on the councils. Nearly all the councils require men of special knowledge and special experience. If the selection of a council member is limited to one district, it eliminates from consideration men, possibly more capable, who are in any one of the other 12 districts of the ADA.

Under this line of succession, regardless of how wise or experienced a man is in dental research, he will not get on the Council of Dental Research if, for example, he lives in Massachusetts, Tennessee, Texas, or in any one of 35 other states. A member may have an unusual knowledge of drugs and their use in dentistry, but he will not be elected to the Council on Dental Therapeutics if he lives in Pennsylvania, Minnesota, Oregon, or in 17 other states. An editor of great skill with a fine talent for writing will never make the Council on Journalism if he lives in California, Ohio, Alabama, or in one of 31 other states.



The ADA can not afford to lose the services of these highly qualified men because they happen to live in a part of the country which is traditionally not represented on the council for which he is qualified.

I have been told that some trustees have admitted the inequity of this system of succession by district. I have also been told that some trustees have admitted that they don't know what to do about it. It is incredible that the chief administrative body of the ADA finds itself helpless in the face of a procedure that admittedly is weakening the councils and the Association.

There must be other methods of arriving at nominations. If it is expecting too much to have the trustees subordinate their political comfort to the general good of the Association, why not try this? Each year vacancies are created in the councils—eight last year. Permit each trustee to make one nomination, from his district, for every vacancy, but not necessarily on the council previously occupied by his district. For example: if his district vacancy is on the Judicial Council, let him say, I know there is a good candidate for this council in district X, and I have an excellent man for the Council on Insurance. If the vacancies were filled on such a joint cooperative basis, no trustee would lose the power of patronage, and the choices would have been made from over half of the nation instead of from one-thirteenth.

Whatever method the Board of Trustees decides to use—if they wish to change from traditional to effective and representative policy—it is important that the present parochial system of selection of council members be replaced by one that will supply the councils with men from a nationwide, or nearly nationwide, pool. Only thus can the membership be assured of an optimum performance on the part of the councils that play so vital a role in the functioning of the American Dental Association.

T.McB.



# Dentistry in the Scientific Era

RUSSELL S. POOR, Ph.D., D.Sc.

*Population growth and the ability to pay for dental services is out-pacing the ability of dentists to meet the dental care demand. By 1975, the average American family will have an annual income of \$10,000.00; the 20 to 34 age group will increase 40 per cent; and there will be two million marriages and five million babies a year. The only way dental care can be brought into near balance with this growing demand for dental services is to reduce the major problems of dental disease through effective research.*

I am honored to have been asked to share some thoughts with you regarding the position of dentistry in our modern scientific environment as it appears to an outsider. My remarks may reflect a lack of a thorough knowledge of the history of your profession, but I can assure you there is no lack of sincerity or respect. If I display audacity in this assignment, it does not arise from any lack of faith in the future of your profession, but from a conviction that undue flattery and praise would mask my reason for being here. The Honorary Fellowship you have proffered and my acceptance of it implies a degree of mutual understanding and good will which, I trust, will survive any unintentional temerity on my part.

It is customary to demand credentials from an outsider who attempts to invade the inner sanctum sanctorum, and I assume this College to be figuratively just that to the dental profession. Briefly, then, my experiences with dentistry are as follows:

My introduction was in 1947 when I was Chairman of the Southern Regional Education Board's Commission on Dental Education. Our task was to survey dental education in 17 southern states. This group of 14 dentists and dental educators recommended ways

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This paper was read at the San Francisco Convocation of the American College of Dentists, November 8, 1964.

and means to eliminate many of the deficiencies pinpointed in the survey. As a five-year member of the State of Florida Selection Committee for Regional Education Students, I assisted in the very interesting task of selecting and recommending dental students from states having no dental schools to appointments in other states having dental schools. For a two and a four year term, respectively, I served on the Visiting Committee on Dentistry of Western Reserve University, and on the National Advisory Council for Dental Research of the National Institutes of Health. For two years I was a member and co-chairman of the Committee on Dental Health—one of four national committees involved in the Survey of Dentistry in the United States conducted by the American Council on Education. I also presented the "Regional Education Plan for Students in the Health Professions" to the Southern Medical Association and then, at a later date, to the Dental Section of the American Public Health Association. In 1952 I headed the study to establish the J. Hillis Miller Health Center at the University of Florida in Gainesville and, for the intervening years before I came to the Washington, D. C. area, as Provost of the Center, I administered the establishment of the new College of Medicine, Nursing and Health Related Services—a 400 bed Teaching Hospital and Clinics, and a College of Pharmacy. I started with one employee and, when I left in 1962, there were more than 800. I had the great satisfaction before leaving the University of Florida of starting a study for the establishment in the Health Center of a new College of Dentistry and I am presently still a consultant in this project. My present assignment then was only a slight change of pace for me—a move to national service through science administration in the United States Atomic Energy Commission.

These experiences on the fringes of your profession do not give me license to be more than a critical observer. While my prejudices and biases will be all too evident, it is my hope they will be accepted in the spirit of constructive observation.

For the greater part, my assignments were concerned with dental education. Since I am one who believes higher education cannot be separated from research, it is logical to expect them to be found together in any college member of a university family. During my visits to all but a few dental schools, it has been my habit to list those strengths and weaknesses which were most obvious to the non-pro-



fessional observer. However, the rudiments of good teaching and good research in any science-oriented field, in my opinion, do not differ greatly from field to field. As you would no doubt surmise, some of these assignments brought frustrations and others doubt—caused in each case by lethargy and an all too common rigid resistance to change.

#### THE LEVEL OF DENTAL RESEARCH

The most enlightening experience was my four years on the Dental Council of the National Institutes of Health. I need not explain to this audience how these councils operate. They were established by the Congress of the United States and are given the legal responsibility of approval or disapproval of all research proposals submitted to the National Institute for Dental Research. The membership of the Council is deliberately chosen so that about one-half of its members are from outside the profession. This provision is designed to bring better balance to deliberations and decisions. The hundreds of research proposals reviewed by the Council during my period of membership helped form my opinions and impressions of the scientists supported by the NIDR. Slightly more than one-half of the proposals submitted were below the level of acceptability. Unhappily, this approval rate has remained essentially constant for many years, even though the funds requested of the NIDR rose from a modest figure in 1948 to over \$8.0 million in 1963. The reasons for the high rate of turn down were primarily a lack of scientific soundness in the proposals and a woeful dearth of experimental design. Back of these obvious deficiencies was, of course, a lack of sufficient depth of education and training on the part of the investigators to fathom what was required to carry out the proposed research. These deficiencies cannot be erased quickly but current efforts to eradicate them, while encouraging in some instances, must be accelerated. Since I believe the hope for dentistry in this scientific era lies in these efforts, I shall devote my attention to them.

Who can say what the level of dental research should be? We do know that the graduates of 50 dental schools, although increasing slightly each year in number, have not changed appreciably the national dentist-patient ratio of 1 to 1,700. So long as most dental graduates enter practice this ratio will worsen because the population growth and the ability of people to pay for dental services is rapidly

out-pacing the ability of dentists to meet the dental care demand. By 1975, according to recent predictions, the average American family will have an income of \$10,000.00 a year, earned in a seven-hour day and a five-day week. The age group from 20 to 34 will increase 40 per cent. It is believed this will result in two million marriages and five million babies a year! These predictions mean higher per capita wealth and this, in turn, has always caused a greater demand for health services. Dentists cannot now satisfy the demand and this situation will intensify.

What is the relation of these facts to dental research? Stated simply, they mean that the only way dental care can be brought into near balance with the growing demand for dental services is to reduce the major problems of dental disease through effective research. This, in turn, requires scientists adequately educated to cope with the problems.

#### WHY ARE DENTAL RESEARCHERS IN SHORT SUPPLY?

Far too few dental schools are producing the caliber of graduate who can qualify for the advanced graduate work required by the researcher. Some schools are beginning to do this, but the unhappy fact is that too many may still be classified as "pull and fill" technical institutes rather than true members of the university family of colleges. Proprietary dental schools in this country are gone, but the simple fact of a location on a university campus does not necessarily mean that true scholarship resides in dental school halls and laboratories.

Dental education must be brought in closer harmony with the scientific era in which we live. It has fallen behind in the march of the scientific revolution which is rapidly developing full speed.

Dental students are admitted to most schools with minimal grounding in mathematics and the basic sciences of chemistry, biology, and physics. When they are admitted they find few of their instructors able to inspire them to greater scientific inquiry. Their basic sciences, therefore, become necessary hurdles along the way leading to the dental chair. Thoughts about the ultimate relationships of the basic sciences and the more glamorous clinical aspects of their training are indulged very sparingly indeed.

Full-time professors in clinical dental subjects are scarce in the dental schools of today. This is true because university salaries can-

not compete with incomes possible from practice. Medicine has learned, however, that truly competing salaries are not essential. They are adequate in most cases, and above the university average generally, but still well below the potential yield of a thriving practice. Medical faculty are also in short supply but the shortage is not nearly so acute as it is in dental schools. Scrutiny of this situation reveals that most medical school graduates have been introduced to research, even though we all know the M.D. is not a research degree. Modern medical education plants the seeds of research. More about this later. The crucial point is that the student of the health professions—medicine, dentistry, pharmacy, or any other—should have the background to enable him to develop in any direction. Many dentists, like many medical men, are remarkably good teachers. Their love of people contributes to this. The desire to teach, plus the introduction to research, divert into advanced graduate work a great number of medical graduates who become the chief source of medical school teachers serving full time. They constitute the backbone of the medical education program. Practicing physicians do part-time teaching in their specialty, but the full-time men really determine the direction and the significance of the program. Dental schools are struggling to attain this condition. In my view there are easily discernible reasons for the difficulty they are having to achieve it. I realize this is a controversial issue but let's follow it through.

Given a student well grounded in the humanities, the social sciences, the basic sciences, and mathematics before entering his professional school, the chance for him to become a scholar in his profession are greatly enhanced. The likelihood of such a man becoming an inspired researcher tomorrow, possibly with his Ph.D., is far greater than will be true if he enters professional training with only a sketchy background in general education and a smattering of the basic sciences. The competition is too great to permit the situation to be otherwise. What should we expect? The challenge of the scholarly life, essential for the true researcher, is too vigorous and too swift for the poorly prepared.

The American College of Dentists is pledged "to foster and promote research and the pursuit of scientific training" and you have taken this pledge seriously. Much has been accomplished. Do not misunderstand me. I do not for a moment believe every dental stu-



dent should be required to meet all the above conditions. What I am saying is that this route should be open to him. Luckily, not every student has these drives, but we are equally fortunate that so many do. For those who have these abilities, encouragement and opportunity should be more readily available. Not enough dental schools today can do very much for students with the ambitions of a true researcher. Every school should provide such a pathway. Perhaps none should devote its program exclusively to this objective. However, as long as we believe that more practitioners are the only answer to dental problems, the situation will improve very little.

This audience needs no reminder that dental problems are staggering in their number and complexity. An American Dental Association spokesman, referring to this fact, said recently, "These problems reach out and seem to be asking, 'What can be done?'" He adds, "The ADA's answer is 'more public education and more dentists to meet the needs of a growing population.'" No one can seriously quarrel with these solutions, as far as they go, but they surely cannot be the completely adequate answer. The adequate answer must lie in the type of education leading to research capabilities which, in turn, will reduce the number and intensity of the dental problems and produce capable practitioners at the same time, if not in such large numbers.

#### THE POSITIVE APPROACH

The complexity of the problems to which I have referred suggests three possible approaches.

First, basic research of the most sophisticated variety is essential. This should be comprehensive and multidisciplinary in character. Strong university environments which can provide not only the necessary capability in the sciences, but in the humanities and social sciences as well, are essential to the success of this phase of the attack. Properly planned and skillfully administered, dental research centers in such environments can, in a relatively short time, possibly five to ten years, provide not only many of the scientific answers sought but simultaneously produce the research talent necessary to "keep the ball rolling." Research alone cannot do this.

Such research centers are not in the category of idle dreams. The U. S. Public Health Service, through the National Institutes of Health, is doing something about them. Recently, I have had the

honor of serving as Chairman pro tem of the initial meeting of a carefully selected Advisory and Planning Committee whose charge is to do those things necessary to bring several such dental research centers into being. Such an effort is long overdue and I trust the American College of Dentists will lend its full and enthusiastic support.

Second, dental education needs revitalizing along several lines. I do not pose as an authority on the curricula offered in dental schools generally. It has been my privilege to visit most of them, however, and it takes no genius to recognize the need for a renovation in several situations. In most cases there is a preponderance of technique or methods courses. "How" outweighs "why" by far, as a rule. Efforts to work out a true relationship between the basic sciences and the clinical courses have made some, but far too little, headway. Interviews with many senior dental students reveal a startling lack of understanding of the reasoning back of requirements in the basic sciences. Many refer to such courses as "hurdles" which must be cleared before getting to the "real thing" in the clinical areas. I know some medical schools have this same problem but, generally speaking, notably greater progress has been made in medicine than in dentistry. Third and fourth year medical students are commonly introduced to the research approach to problems where one or more basic sciences are essential. Either during the regular school term or during the summer months there is a required concentration on a research problem under supervision and competent guidance. The result may be that some medical students are attracted to research and away from practice. The attitude of these schools in this event is, "So be it. This student will make his greatest contribution in the area of his greater interest, so why be concerned about it?" The fewer the unresolved problems the fewer practitioners will be needed, seems to be the point of view. A few, very few, dental schools are following a somewhat similar plan. Hopefully, their number will increase.

In order that a dental school curriculum and program may be balanced in some logical fashion between its emphasis on research and practice, a decision needs to be made about the type of student to be recruited and admitted. If 100 per cent of admissions have the minimum of two years of college work, there is little hope of producing researchers in the four years allotted to dental training.

There have been very few exceptions. A few dental graduates go on for a Master's degree but the nature of the unsolved problems in dentistry requires thinking at the very forefront of human knowledge. Even the Ph.D. degree is inadequate in many fields and post-doctoral work is now quite common. I am not saying every entering dental student must have a baccalaureate degree, although I believe this will some day be true, but what I am saying is that dentistry and the public will be better served in the long run if there is stronger emphasis on a balance of knowledge—the humanities, the social sciences, as well as the basic sciences—rather than upon a curricular process that produces only practitioners. Much of medicine has learned this lesson, engineering is rapidly learning it, and other professions are awakening to the requirements brought on by the scientific revolution. I repeat, not every student can or should go this route but the pathway should be there for those who can stand the pace. This route requires a true love of science. The love of science does not derive from a smattering of science. It comes from an insatiable yearning for knowledge, a sharpened curiosity and a genuine and deep determination to know why nature behaves as it does—in the oral cavity no less than in any other part of the body! Human biology challenges all sciences—physical as well as biological—and the poorly prepared in a class can only make the task more difficult for others who are more capable. Do not enter this dense forest if your compass is not accurately calibrated!

Third, dentistry must slough off at least some of its provincial, outmoded, and independent ways. The tempo of the scientific revolution demands this of all professions if they wish to attain and hold the modern pace. The nature of clinical practice in dentistry, as well as medicine, has changed more in the last 25 years than it did in the preceding 200 years. The rapid accumulation of knowledge and the unprecedented demand for health services, encouraged by the many types of health insurance, are among the principal causes of this change. As our knowledge of human biology is increased through a better comprehension of the role of the basic sciences in human processes, then all professions concerned with organic behavior of mankind will be drawn closer and closer together. Some believe we may ultimately understand the biochemistry and the physiology of man. When this is true, as I believe it will be, the communications of all health professions will enjoy a common denom-



inator and barriers between dentistry and medicine and between each of these and the basic sciences will be largely removed.

As populations increase and the demands for health services multiply, as indeed they are doing at a terrific rate, group practice will become more and more a necessity. Specialties develop because of patient demand and their solo practice is bound to become more difficult. When grouped, the patients' interests are better and more quickly served. This device also makes the use of chairside assistants and dental laboratory assistants more feasible, thus the specialists' time is conserved and the public receives better care. I can foresee dentists and physicians practicing in the same group just as they are now working together in some hospitals. These two professions should be supplementing and complementing each other rather than insisting upon independent and sometimes conflicting ways.

The new human biology, arising from the multidisciplinary research alluded to above, will not be the exclusive property of the Doctor of Dental Medicine or the Doctor of Dental Surgery, the Doctor of Medicine nor even the Doctor of Philosophy in the basic sciences. It will be common property. When this is true, dental schools will no longer be willing to train technicians rather than truly educated graduates. These young men must have the background that will enable them to develop into the best practitioners or the best professors and researchers this nation has ever known. The public will demand the best, and the best can be produced only by pooling the resources and the capabilities of all the health professions and all the basic sciences. Dentistry is at the threshold of its greatest hour as it seeks to join hands with other health professions through the common bond of research in the basic sciences and other disciplines so necessary to the understanding of man. This is probably the greatest challenge of the scientific era in which we live.

*The incidence of dental caries in Filipino children is extremely high. The authors estimate that 14,080,000 dental man hours are needed to restore the teeth of these children. That would mean 6,000 dentists working 8 hours a day, 5 days a week, 45 weeks a year, to catch up with the present dental care problem. There are not now, nor will there be, enough dentists to cope with this problem. The only answer is prevention. Dentists in the Philippines are taking their first firm step in this direction.*

## The Dental Caries Problem In the Philippines

B. B. ERAÑA, D.M.D., and LUZ C. MACAPANPAN, D.D.M., M.S.

OUR ORIGINAL intention was to present to this body some information on the dental health conditions and problems of the Philippines so that they might form part of the body of knowledge of dentistry throughout the world. Our problems are many: in dental health, in dental research, in dental organization, in dental schools. To attempt to discuss them all would be laborious. To merely mention them would be unrewarding.

For this reason, we have decided to concentrate this presentation on just one problem: dental caries. At the end of this paper, we are sure that you will be, as we are, aghast at the enormity of the problems and conclude, as we and many other have, that there is a crying need for preventive measures.

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Dr. Eraña is on the staff of the Manila Doctors Hospital. He is in general practice. Dr. Macapanpan is a professorial lecturer at the College of Dentistry, University of the Philippines. She specializes in orthodontics.

This paper was read at the San Francisco Convocation of the American College of Dentists, November 8, 1964.

In order to be able to understand how such a staggering problem came about, one must first be aware of certain facts about this country.

The Philippines is an archipelago composed of more than 7,000 islands, some areas of which are still inhabited by quite primitive peoples shackled by many old notions and superstitions. There is a diversity of cultures ranging from Ifugao to Maranaw in its northernmost and southernmost provinces and influenced by Western cultures, primarily American and Spanish, in its urban and many rural areas. Although there has been propagated a national language, Tagalog, and the vast majority of its people speak English or Spanish or both, there are more than 90 different indigenous languages spoken.

Born out of the holocaust of the last great war, the 30 million people of the 18-year-old Republic face many problems: social, economic, and political. Blessed with a school system introduced by Americans, literacy is more than 75 per cent, ranking second only to Japan in the entire Far East. The Philippines now has a pool of college-trained, vigorous young men and women who are aching to solve her many problems but who find themselves hemmed in by an economy that is not too healthy. The Philippines, mostly an agricultural country, has yet to industrialize herself to an extent which may make her self-sufficient. She has a tremendous wealth of natural resources but capital is wanting and shy.

Unemployment is high—6.5 per cent. The per capita income is a low 427.00 pesos, or \$123.50 per annum. Price of prime commodities keep spiralling so that the buying power of the Philippine peso is now only 0.25 of its pre-war value.

Under such conditions as these, it is no wonder that dental care has been relegated to the background. The family budget just cannot afford it. The government is trying hard to cope with this problem with help from the Philippine Dental Association, the World Health Organization, and some manufacturing firms of dental products.

#### CARIES PROBLEM IN CHILDREN

This paper will further limit itself to a discussion of dental caries in Filipino children under age 14, for in the dental health of its youth will depend the dental health of future generations.



## 1. In Urban Areas

TABLE 1  
DMF RATES FOR PERMANENT TEETH IN FILIPINO CHILDREN IN  
URBAN AREAS, AGE 6-14

Year of Survey	Number of Children Surveyed	Age 6-7		Age 12-14	
		% OF CHILDREN WITH 1 OR MORE DMF TEETH	DMF RATE	% OF CHILDREN WITH 1 OR MORE DMF TEETH	DMF RATE
1951	1,287	52.7	1.1	97.1	7.3
1958	322		1.25	92.0*	8.9
1959	1,863		1.4	97.2*	9.6

\* For entire group.

All these surveys (Table 1) showed that there was a larger percentage by far of the D rates over MF rates. Juliano (1959) showed that the ratio of untreated teeth to be filled was one anterior to four posterior teeth, and that the average school child had about six untreated teeth with one tooth indicated for extraction and the rest for fillings. He estimated that a total of 11,000 man hours was needed to cope with the immediate dental needs of his surveyed group short of prosthetic restorations.

Reyes (1958) notes with interest that her surveyed group were children of the faculty of one of our universities and were expected to have a higher income level and higher educational attainments, and therefore should have a higher dental health awareness.

In another survey Juliano (1960) found that of 1,099 children, age 3-12, the average 3 year old child had about five deciduous teeth attacked by caries, and less than one tooth of these filled with a permanent filling material. At the age of 6, about 7.5 deciduous teeth had been attacked by dental caries, or a yearly increment of about one deciduous tooth per child.

The present population of the Philippines is about 30 million. Of these, 45 per cent are children from 3-14 years of age or about 13,500,000, and of these, 30 per cent or 4,040,000 reside in urban communities. If 92 per cent of this age group have at least one DMF tooth, there are, therefore, 3,726,000 children in urban areas in need of dental care. Since the average child at this age range has about five teeth that need to be filled, there are, then, 18,630,000 cavities that need to be filled.

## 2. *In Rural Areas*

The remaining 70 per cent of Filipino children, age 3-14, totaling some 9,450,000, reside in the rural areas.

A survey made by the Department of Health with assistance by WHO and UNICEF in 1960 revealed that in 36,765 children surveyed for dental caries in deciduous teeth, the DMF rates ranged from 3.06 to 0.72. Dental caries in permanent teeth was surveyed in a group of 37,124 children from age 6 to 14. DMF rates were from 0.53 to 2.51 per child, with a yearly increment of  $\frac{1}{4}$  tooth per child per year.

It will be noted that DMF rates for urban areas are much higher than those for rural areas. Although none of the surveys ventured any explanation for this, one might surmise that the following factors influence this fact: (1) children in rural areas do not have much access, if any, to foods containing refined sugars; (2) the basic diet of children in rural areas consists of rice, green vegetables, and fish, and such fish are eaten skeleton and all, thus making available to rural children large amounts of calcium and fluoride; (3) children in rural areas rarely, if ever, partake of sweet sticky foods which remain on the teeth and promote dental caries, but rather have the advantage of the natural brushing action of pulpy fruits and vegetables; and (4) the water supply in many rural areas comes from artesian wells or springs and many of them show fluoride concentrations of 0.7 ppm. to as much as 7.0 ppm.

Although no data are available, it is observed that there is a greater incidence of periodontal disease in the young adults and adult segments of the population in rural areas. This may be due to the lack of protein from meats, eggs, and chicken in their diet.

As in the survey of children in urban areas, the number of filled and extracted teeth was far below that for decaying teeth. An average of one tooth per child needing fillings; therefore, there are at least 9,450,000 cavities that need to be filled.

## 3. *Man Hours Needed to Cope With Needs*

There are, in the entire nation, 13,500,000 children between the ages of 3-14 who need to have about 28,080,000 cavities cleaned and filled. If a dentist needs at least 30 minutes to properly prepare and fill a cavity, 14,080,000 dental man hours are needed to tackle the job, or more than 6,000 dentists working a full 8 hours per day, 5

days per week, 45 weeks per year, one full year, to catch up with the present dental caries problem! And this does not include other dental services needed in addition to fillings!

#### THE PHILIPPINES DENTAL MANPOWER

Does the Philippines have a sufficient number of dentists to cope with this problem? If she does not now, will she in the very near future? To both these questions, the answer is, unfortunately, NO.

The Board of Dental Examiners reports that from 1903 to the present, a total of 10,349 dentists have registered in the Philippines. Some since have died, retired, or given up dentistry in favor of less demanding, more lucrative pursuits. Unfortunately, we have no data on the present number of dentists in the actual practice of dentistry. A fair estimate would be about 8,000.

The population of the Philippines is almost 30 million. The ratio is, therefore, one dentist per 3,750 population. As in other countries, most dental practitioners, for economic reasons, are situated in urban areas such as Manila, where the ratio may be as good as 1:1,145, rather than in the rural areas where it may be as bad as 1:15,000.

In spite of this imbalance in dentist:population ratios, we are happy to report that conditions are much better in the Philippines than in other countries of the Far East.

At the Third Asian-Pacific Congress held in Tokyo in 1961, other countries reported the following:

Country	No. of Dentists	Population	Dentist: Population Ratio
1. Japan	32,000	96,000,000	1:3,000
2. Philippines	6,000	28,000,000	1:4,700
3. Taiwan	706	11,000,000	1:15,580
4. South Korea	1,503	25,500,000	1:17,000
5. Malaya	152 a 467 b	6,000,000	1:40,000 a 1:10,000 a & b
6. Thailand	270 a 880 b	25,000,000	1:92,000 a 1:22,000 a & b
7. Indonesia	400 c 63 d	95,000,000	1:272,500 c 1:205,200 c & d
8. Cambodia	None	6,000,000	

Note:

- a. Qualified dentists, i.e. graduates of dental schools
- b. Unqualified dentists, i.e., apprentices, not graduates, allowed to practice dentistry
- c. Graduates of dental schools
- d. New Zealand type dental nurse

Of the 8,000 dentists of the Philippines, approximately 1,200 are in government service, the rest in private practice. This number is much lower than the dental manpower needs of the republic.

In the meantime, enrollment in dental schools in our country is diminishing. There are ten dental schools in the Philippines, one of which has just opened and has accepted only first year students. Of the other nine, one is a state university and the others are private colleges. Table 2 shows the comparative enrollment in these nine colleges of dentistry.

TABLE 2  
COMPARATIVE ENROLLMENT IN DENTAL COLLEGES OF  
THE PHILIPPINES IN 1961 AND 1964

College	1961					1964				
	Year in College					Year in College				
	I	II	III	IV	TOTAL	I	II	III	IV	TOTAL
A	16	18	9	11	54	23	17	18	14	72
B	180	238	302	388	1,108	123	130	177	268	698
C	34	45	90	47	216	14	26	25	30	95
D	16	18	26	11	71	10	5	15	25	55
E	59	63	101	116	339	47	45	51	84	227
F	25	38	42	43	148	24	24	23	21	92
G	68	42	45	45	200	22	29	39	40	130
H	8	25	22	35	90	4	11	9	14	39
I	15	24	22	22	83	4	9	8	21	42
Total	421	511	659	718	2,309	271	296	365	517	1,449

It is saddening to observe that there is not only a 38 per cent decline in total enrollment of dental students from 1961 to 1964 but also the same trend of decreasing enrollment from fourth to first years.

This means that we not only have an inadequate number of dentists but that we are also turning out fewer each year. This is out of balance with the population increase of the country.

As of July 1, 1962, the birth rate was 28 per thousand as compared with 29.2 per thousand in 1960. The death rate in 1962 was 7.2 per thousand while in 1960 it was 7.7 per thousand. The life span of the Filipino has increased from 28 years in 1926 to 50-55 years in 1960, and 57 years in 1962. It is stated that with the present trend in population increase and life span, the Philippines will have doubled its population in some 20 years.

## CURRENT MEASURES FOR PREVENTION

While it is true that we have hardly made a dent in the solution of the dental caries problem in the Philippines, neither have we been entirely asleep. Various agencies, mostly governmental, are rendering dental services to the people.

The Public School Dental Service dates back to 1922 when it was first organized by the Philippine Chapter of the American Red Cross. This was known as the Junior Red Cross, responsible for ushering public health dentistry into the country. The Public School Dental Service is now the biggest single dental agency in the Philippines with a dental manpower of 414 school dentists and an equal number of dental aides. Its dental health services include prophylaxis, fillings, extractions, and simple periodontal treatment. Its dentists are required to join in health education programs with the other components of the school health service. A start has been made in topical fluoride applications. Toothbrushing demonstrations and drills are held from time to time.

The Rural Health Act in 1954 created the Rural Dental Health Service. Public Health dentists are assigned to all the 102 congressional districts on an average of 2-3 dentists per district. This service also absorbed the charity dentists formerly supported by the Philippine Charity Sweepstakes. These dentists, together with those in government hospitals, puericulture centers, and city health departments extend dental treatment to all age groups.

All these dental entities were under the Department of Health. They were organized into eight Regional Districts. For all purposes, each Regional District functioned independently. Consequently, there was no coordination and supervision was inadequate.

Last year, Congress voted into law Republic Act No. 3814 creating the Bureau of Dental Health Services under the Department of Health. It is charged with the coordination, control, and supervision of all dental health services in the government except those of the Armed Forces of the Philippines, dental infirmaries for the training of dental students, and those under the Department of Education. It shall also supervise the dental health services in private firms and private educational institutions. This Bureau is now in the process of organization, drawing its funds from the September 1964 draw of the Philippine Charity Sweepstakes. It is expected to eventually raise its dental manpower from the present 400 to 1,024.



Also signed into law late last year was Republic Act No. 403 providing for the fluoridation of the water supply of the National Sewerage and Water Agency. When implemented, this will bring optimal concentrations of fluoridated water to some 3 million inhabitants of Metropolitan Manila.

All the laws relating to the improvement of the dental services and accruing to the better dental health of the nation have been introduced and pushed through at the instance of the Philippine Dental Association.

In addition, the Philippine Dental Association, through its various affiliates and chapters, leads in the annual celebration of National Dental Health Week from February 3 to 8 to focus national attention on the need for dental prevention and care.

#### CONCLUSION

Time has limited our discussion to the dental caries problem of the Philippines. We have not dwelt at all on periodontal disease which is admittedly rampant but for which no data are available. A study on oral cancer shows that it occurs in 21.7 per cent of all cancers as compared with 11.79 per cent for breast cancer. This is due largely to a persistent custom among rural Filipinos of chewing a mixture of betel nut and lime wrapped in "ikmo" leaf, and of smoking with the lighted end inside the mouth. Too, many Filipinos who lose their teeth are financially unable to obtain prosthetic restorations.

Without doubt, we cannot hope to ever catch up with our dental caries problem by therapeutic and mechanical means alone. The only answer is prevention—and in this we are taking our first firm steps. Our national economy prevents our progressing as fast as we want to, but we hope that with the help of such international agencies as WHO, UNICEF, and CARE, and with the interest of organizations such as the American Dental Association, Federation Dentaire Internationale, the American College of Dentists, and others, the Philippines may reach a high degree of dental health in the near future.

# A Missionary Dentist in the Congo

SANDY C. MARKS, SR., D.D.S., M.S.

I am pleased to have this opportunity of sharing with you some of my experiences and impressions as a missionary dentist of the Presbyterian Church in the Congo from 1948 to 1961.

For some time prior to 1948, my wife and I had been trying honestly to live our Christian faith, attempting to regulate each area of our lives according to the Christian concept, and seeking the answers to our daily problems through prayer and Bible study. Naturally, this drew us closer to the Church and its activities. On one occasion it was our privilege to hear the Executive Secretary of our Board of World Missions, who had come to our local Church to give a series of talks on missionary work in the Far East—China, Korea and Japan. During these talks he failed to mention the subject of dentistry. To us, this seemed a significant omission and it prompted an interview. We talked with him for more than an hour. He asked us many questions and we asked many in return. Since my wife was a registered nurse, he became interested in this dentist-nurse combination for possible service in mission work.

We learned that there was no organized dental program on any of the mission fields of our Church in eight countries. In fact, there was not a single dentist among the approximately 500 missionaries employed by our Board. We were advised that, in the future, if we felt led to volunteer our services for mission work, to give consideration to the Congo. Possibilities for such a venture were outlined whereby we might be placed at a mission station named Lubondai where our School for Missionaries' Children was located. Our three children could live with us during the time of their grammar and high school education and then return to the States to attend college. Dental care could be given to all the missionary children at this station, and it could also be used as dental headquarters for the entire mission of ten stations.

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This paper was read at the San Francisco Convocation of the American College of Dentists, November 8, 1964.

Prior to this time, the idea of going to the Congo had never entered our minds. For three years afterwards neither my wife nor I mentioned this interview to each other, although we thought about it many times. Finally, word came from the Congo asking for the services of a dentist. The call came to me. This was it! We did not fight it. Instead, we thought about it and prayed about it for approximately a month, and then we volunteered our services. This seed of thought planted three years earlier was ready to bear fruit!

Concerning the need for dental care, we learned that there were no Congolese dentists in this Belgium colony that had a total population of 12,000,000, including approximately 100,000 Europeans. There were only 25 or 30 dentists there, and they were not sufficient in number to adequately care for the dental needs of the Europeans, not to mention the Congolese who were not accustomed to dental care in the first place and did not know anything about modern dentistry.

We also learned that the dental care for our 160 Presbyterian missionaries, along with that of their children, had been done not by a licensed dentist but mainly by one Evangelistic missionary, the Reverend Mr. Hugh S. Wilds. His limited dental training had consisted of only a few months of private study under a practicing dentist in Richmond, Virginia, during his first furlough 25 years earlier. Since that time he had limited his missionary work to dentistry.

Two other Evangelistic missionaries also did a fair amount of dental work. This consisted for the most part of simple fillings and extractions without local anesthesia. The extractions were done mainly in the "bush villages" during evangelistic itinerations; I like to call these "evangelic extractions"!

In considering this call, my wife and I could clearly understand the tremendous need for dental care in the Congo. Our ability to meet that need would be limited, but it could be possible to give adequate dental care to all of our missionaries and their children, and have some spare time for the training of Congolese; in this way we could multiply our services. With this dual purpose in mind, on August 29, 1948, we sailed from New York on a cargo-passenger ship of the Belgian Line headed for the Congo.

After two weeks at sea our ship entered the mouth of the Congo river on the west coast of Africa. During the voyage up-river to the Port of Matadi, some natives paddled their dug-out canoes close to

our side. Our small daughter, aged four, was quite embarrassed. She said, "Look, Mommy! Those people in the boats do not have on any clothes!" This was our first experience in seeing nude and semi-nude people in Africa. It was shocking at first, but we soon became accustomed to it and took such things for granted.

We carried with us as baggage enough dental equipment to install a modern two-chair dental office, including two gasoline-powered electric generators, a new X-ray machine, and enough supplies for a year's work.

It was evident from the start that things were done the "hard way" in this under-developed country. Our mission station at Lubondai was located 1,200 miles in the interior, and 25 miles from the nearest railroad station at Tshimbulu in the Kasai Province. For the sake of efficiency, I personally looked after the complicated problem of shipping our baggage . . . 200 miles by rail to Leopoldville . . . 800 miles by river boat to Port Franqui . . . and 200 miles by rail again to Tshimbulu. When we finally arrived at our station, the baggage appeared only eight days later. This was considered nothing short of a miracle as it was the usual custom for missionaries to have to wait from six to nine months for their baggage to arrive.

The trip inland for the most part was interesting and enjoyable. However, we did have some unusual experiences and a few narrow escapes. Mention might be made of the hotel situation in Matadi. During our stay of five days, there was no hot water for baths and the water was only turned on in the afternoon for a few hours. One could drink the water from the faucets in Matadi, but this was the only place in all the Congo where it was safe to drink water without it first being boiled. We spent one night in Thysville on our way by car over dusty roads to Leopoldville. Here our bath water was bloody-red, due to so much mud in it. On the river boat from Leopoldville to Port Franqui, a seven day journey, even the drinking water was muddy. We drank soda water and Coco-Cola during this time.

Our baggage and car had preceded us up-river and were still on the barge when we arrived at Port Franqui. This happened to be in the area of our mission and one of our stations, Luebo, was located 120 miles inland. We were able to get our car unloaded around noon and drove it to this station for the night. The first thing offered us on arrival was a beautiful, large, clear glass of cold water! It had

been boiled, filtered and refrigerated. You can well imagine how this was appreciated.

We arrived at our station at Lubondai just three weeks prior to the time of the Annual Mission Meeting, during which all work plans for the coming year had to be approved. Our most pressing needs were a dental office building and a guest house for dental patients. Plans and specifications for these buildings were quickly drawn up, and bids for their construction were given by a local contractor. These were ready for presentation at the meeting.

During the meeting we installed some portable equipment in one of the out-buildings, made examinations, and did some emergency work for the missionaries and their children. We used almost a gross of X-ray films in one afternoon. Ours was the only X-ray machine available in that part of the country at that time. We also set up a priority list of treatment for the missionaries. The plans and specifications for the dental office and dental guest house were approved and the money allocated for their construction. With all this accomplished during our first month on the field, we felt that we were off to a good start in our missionary career.

The remainder of our first term of three years on the field was spent in caring for the dental needs of the missionaries and their children; doing work for Europeans; constructing the dental office, guest house and residence; learning the native dialect; and laying the foundation for a dental school for the Congolese.

It was not our purpose in going to the Congo to build up a large European clientele. However, when word spread that there was an American dentist on the mission, Europeans from as far as 500 miles came for dental care. They were in great need, and we did work for them on a professional fee basis. The profits from this work were later used for buildings and equipment in connection with the dental school.

It was realized from the start that one dentist alone could not operate a dental school. However, a plan was worked out whereby two dentists could do it on a very limited basis in cooperation with the medical department.

A Medical Institute was created by the Mission and located at our station. It consisted of a School for Nurses (male), a School for Laboratory Technicians, and a School of Dentistry. The personnel assigned to this Institute consisted of two dentists, two physicians, two



nurses, and one laboratory technician. Dr. and Mrs. J. B. Jung, Jr., Zachary, Louisiana, joined us during our second term on the field and helped in founding the first dental school in the Congo.

There was no existing law governing dental education for the Congolese. Through correspondence with the Chief Medical Officer of the Colony, we were able to work out a curriculum for our school; it consisted of 22 courses to be taught in the French language over a period of three years. This was to be followed by two years of internship before receiving diplomas. Included in the curriculum were eleven basic science courses. The teaching load was lessened by combining these basic science courses with those in the Medical School, leaving only eleven dental courses to be taught by the two dentists over a period of three years. The teaching load was further reduced by the decision to take in a new class of students every two years instead of one each year.

In order to assure the availability of two dentists in this school at all times and to cover furloughs, it was necessary to have a third dentist. Dr. and Mrs. Bernard G. Jackson, of Chicago, Illinois, joined our staff in 1957.

When we were ready to take in our first class, it suddenly dawned on us that the students in the mission schools did not have the faintest idea about modern dentistry. This was something entirely new for them—a totally different concept. They knew only about the custom of filing the teeth for tribal identification. The Bena Lulua filed a V-shaped notch between their upper central incisors. The Bakete and Basalu Mpsa filed their teeth pointed like a picket fence, and the Baluba knocked out their upper central incisors leaving an open space. This could not be classed as modern or restorative dentistry!

It was decided to make a tour of the mission stations for the purpose of explaining to prospective students the type of dentistry we were to teach in this new school. We carried samples of full and partial dentures, X-rays, filling materials, and instruments; these were used as "props" in salesmanship.

Our recruitment efforts resulted in 35 applications to our new School of Dentistry. We accepted twenty of these applicants. Nineteen arrived for the opening day in September, 1955. Because of the low educational standards in the Congo, it was necessary to take in students from the seventh grade level without any science background.

The clinic building was completed in 1957 and we accepted a second class of eleven students at that time. Only six of the original nineteen in the first class were able to graduate and receive State Diplomas after the completion of the five years of training. Formal graduation exercises for this class were held on June 18, 1960, just twelve days prior to the date of "Political Independence." The world is well aware of the confusion and chaos following "independence!"

The members of our graduating class were given high government positions at this time; one became the Chief Dental Officer of the Kasai State, another was made Chief Pharmacist.

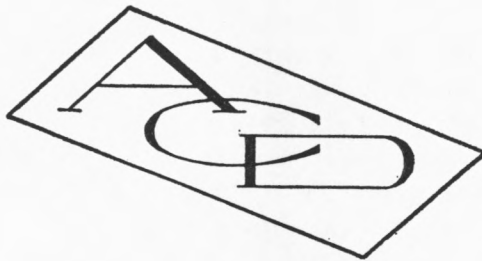
Our missionaries were forced to evacuate the Congo about this time. A month later, Dr. Jung and I returned with a group of 19 men. Our families came to the States.

After "independence," I was able to get the diplomas signed and sealed by the new Republic of Congo officials. I delivered them to our graduates. I was also able to furnish equipment and supplies to these graduates and to the remaining four students in the second class, who were ready for their internship, and install them all in their respective tribal areas. With this accomplished, I came back to the States to join my family in March, 1961.

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Because of conditions in the Congo since that time, we have been unable to reopen the school.

Chapel Hill,  
North Carolina



# Dental Education and Practice In Portugal

JESS HAYDEN, JR., D.M.D., Ph.D.

*In 1963-64, Dr. Hayden was a Fulbright-Hays Visiting Professor at the Royal Dental College, Aarhus, Denmark. In an earlier paper in the JOURNAL (July, 1964), he discussed dental education in Denmark. The present paper records his observations on a visit to Lisbon as a guest lecturer to the Portuguese Stomatological Society. Another paper on dental education in Finland will appear in the JOURNAL later this year. Dr. Hayden has resumed his position as Assistant Professor of Anatomy, Schools of Medicine and Dentistry, Loma Linda University, California.*

The Portuguese dentist is often described as a "stomatologist" by his North American confrere. The latter is often at a loss to describe accurately the educational processes by which one becomes a stomatologist (although he realizes that a medical education is involved) and the level of dentistry which is practiced. It is true that the Portuguese medical profession and the Ministry of Education regard the treatment of oral diseases as a province of medicine, that there is no dental school in Portugal, and that the practice of dentistry as known by the North American, British, or Scandinavian dentist is difficult to achieve. The purpose of this report is to describe the various aspects of the practice of dentistry in Lisbon, as observed during a brief lecturing assignment as a guest of the Portuguese Stomatological Society in cooperation with the Luso-American Educational Commission (Fulbright-Hays).

The Portuguese dentist is known professionally as a physician specializing in the treatment of the teeth and jaws (specialist-stomatologist). There are approximately 550 such individuals. Nearly 400 are registered on the rolls of the Portuguese Stomatological

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(Grants-in-aid for travel from the American College of Dentists and the American Scandinavian Foundation are acknowledged with appreciation. J. H., Jr.)

Society, the official corollary to the American Dental Association. Among those qualified, but who are not registered as stomatologists, are a number practicing both medicine and dentistry in the rural areas.

In the cities there is a concentration of physicians limiting their practice to restorative dentistry or oral surgery. The number of unqualified practitioners is small and diminishing. It is believed that these individuals were laboratory technicians upon whom medically trained stomatologists relied completely for help in restorative procedures. The increased amount of clinical training now required of the stomatologist has defined for the laboratory technician his rightful position as a valuable auxiliary, although he may assist the stomatologist in a way that is known but officially disapproved in the United States. Such supervised assistance aids in meeting the needs for dental care of the population and can not be readily criticized as two-level dental practice.

The stomatologist first receives the licentiate in medicine which requires six years and ten months of medical training, then one year of general surgery, one year of general medicine, and three years of dental training in the hospital dental clinics of Lisbon (3), Oporto (1), and Coimbra (1).<sup>\*</sup> As an alternative to the latter three years of training, he may study two years in a foreign dental school. There are therefore, a small number of graduates from the dental schools of the University of Pennsylvania, Geneva, Madrid, and France. The usual practice, however, is to fulfill concurrently the requirements in general surgery, medicine, and dental residency, thus reducing the five years of post-medical training to three calendar years.

Licensure is granted after the candidate is examined by a board which usually includes an oral surgeon, general surgeon, and a general practitioner of dentistry. Oral, written, and clinical examinations are given, ranging from general and oral pathology to a denture set-up, or from anatomy to the construction of a cast gold crown or inlay. Candidates usually pass the examination. There is apparently no agreement concerning reciprocity of practice privileges between Portugal and its neighboring countries.

Ancillary personnel is selected and trained by the dentist. The resulting product is variable because Portugal requires only four

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<sup>\*</sup> World Directory of Dental Schools. World Health Organization. Distribution and Sales Unit, Palais des Nations, Geneva, Switzerland, 1961, 228 pp. (p. 165-6).

years of compulsory grade school education. Some assistants have had more education, including training as a nurse's aide. What a surprise it is to greet a receptionist who converses in English and French as well as Portuguese, and to learn that she has acquired the first two languages under the tutelage of the dentist. Assistants are not particularly well paid but they apparently develop a possessive interest in "their" dentist and office. The same type of loyalty in patients educated to appreciate dentistry makes it impossible to "sell a practice" or very difficult to transfer patients to an associate.

Laboratory technicians also must be trained by the dentist. A Vitallium laboratory in Lisbon serves the south of Portugal and another one in Porto the north. The dentists utilizing the services of the former sponsored a visit for training to the United States for the technician in charge of the laboratory. Dental restorations which require the use of porcelain must be sent to laboratories in other countries at present. At least one dentist is personally developing his own private office porcelain laboratory. Dental equipment in Lisbon is usually of European manufacture.

The difficulties of importing and servicing make the purchase of United States equipment impractical. Motor-driven chairs, air-rotors, and modern lighting are to be seen. The pride of Lisbon's dentists is one office which employs in its three operatories all available modern aids to efficient, washed-field restorative technics. There is, understandably, greater admiration for the professional zeal and energy of the dentist than for the equipment, because it would take approximately "10 times" as much effort and financial investment to accomplish the same results in the United States. The problems of purchase, shipment, and importing of dental equipment and supplies is formidable. The several offices visited were all adequately equipped by any standard, including oxygen and other patient supportive measures as well as portable, compact, battery operated equipment for the care of patients in the home or hospital. Modern technics including the use of hydrocolloid or rubber base impression materials make possible the efficient rendering of restorative and prosthetic dentistry.

The problems affecting the practice of dentistry are many. Oral surgery, which service includes maxillo-facial surgery, is a well advanced part of the profession. Orthodontics is appreciated by the oral surgeons, those practicing dentistry, and a very limited number of



the population. There are approximately eight in Lisbon whose practice is limited largely to orthodontics. Recommendations for the care of the primary teeth are not accepted by the public; they generally visit the stomatologist only for the treatment of pain, infection, or trauma. Government sponsored hospital clinics provide such services at no cost to those in need. However, the services rendered in private practice are paid for by the patient with no third party insurer.

Dental education in Portugal is very much the concern of many of the Stomatological Society. There are those who understandably favor the status quo because the uninitiated physician equates the dentist with the itinerate tooth-puller of the past whereas the present system provides professional equality. The stomatologist who practices restorative dentistry may regard his professional prerogatives as dearly purchased in terms of time and adequacy of training. He admires the Swiss, Scandinavian, and United States system of autonomous dental education.

It was emphasized repeatedly by the majority, that the profession's first and most pressing need is a school offering two years of clinical dentistry to the physician who elects to practice dentistry. The Ministry of Education has not yet seen the need for this training. Secondly, there is a great need for visiting essayists and in particular clinical demonstrations. To be maximally effective the visitor should speak French, Spanish, or Portuguese. Because much dental literature is available in the Romance languages and German, and because financial restrictions limit his education to countries employing these languages, the multilingual stomatologist of Portugal has not found it necessary to develop a mastery of spoken English.

In summary, the Portuguese stomatologist may be among the world's most dedicated dentists as measured in terms of educational requirements, difficulties of obtaining trained ancillary personnel, obtaining equipment and supplies, and the difficulties he faces in prescribing treatment for a population that is largely indifferent to routine dental care. He is interested in the establishment, within Portugal, of better facilities for clinical training in restorative dentistry. For those Fellows of the American College of Dentists who are interested in the stomatologist's approach to dental practice, a visit with his confreres in the geographically attractive city of Lisbon will be a rewarding experience.

# Short Courses for Dentists: Some Survey Results

ROBERT M. O'SHEA, M.S., and SHIRLENE BLACK, B.S.

*The authors are sociologists working as analysts in the Communications Section, Social Studies Branch, Division of Dental Public Health and Resources, of the U. S. Public Health Service. They are using data from a 1957 national survey of dentists by the National Opinion Research Center, University of Chicago. They are preparing another paper about refresher courses and related factors. They are attempting to analyse some of the things involved in continuing education of this kind.*

Dental educators and other leaders in the profession have agreed that continued learning is essential for the maintenance of professional excellence, and that "the dentist or physician who is conducting a 1943 type practice in 1963, is rendering limited service to the patient and constitutes a liability to his profession" (1).

The stress on keeping up with the research revolution is not peculiar to dentistry. Continuing education has been formally accepted as a central value in most professions, but "those who have the basic knowledge and skill for restoring and preserving health have an even greater obligation to further their education and keep abreast of all new developments pertaining to their specialty" (2).

Different areas of the dental profession place varying importance on the several methods by which the practitioner may fulfill this obligation. Most educators consider graduate, postgraduate, and refresher courses offered at the university level to be the best ways to keep up-to-date, although they realize that the great majority of dentists continue their education after graduation chiefly through society meetings, dental literature, and consultation among colleagues (3).

Methods for teaching and learning after dental school are presently undergoing discussion and evaluation. How may the largest num-

ber of dentists be reached? What ways are easiest for the practitioner, for the teacher? What ways will bring greatest retention and use of new knowledge? Perhaps the "best" answer to these questions has yet to be found by educational research and experiment. There are present on the horizon such methods as programmed teaching that will bring instruction to the dentist in his office, home, or community. There are other techniques, such as radio and telephone seminars, closed circuit television, and others that will change the current shape of continued education. Nevertheless, as dentistry pays more and more attention to continuing education, the traditional short or refresher courses given at dental schools and society meetings will probably increase in number and in the importance they have in the total program for training after dental school.

This article reports some basic data on dentists' participation in continuing education through short refresher courses. Much discussion of the subject has suffered from the lack of reliable facts, on a national basis, about attendance, frequency, sponsorship, and content of short courses. By analyzing data originally collected in a study of preventive dental practice, it is possible to make some baseline estimates that should be useful to the continuing education movement (4). It should be pointed out that our data were collected a few years ago, and that enrollments in short courses have rapidly swelled since. The *Transactions* (1963) of the American Dental Association reported an increase in enrollments in short courses given at dental schools of 53 per cent over the 1957-1958 academic year.

#### DATA

The data were taken from a questionnaire survey of 758 dentists, actively engaged in private practice, who together constituted a representative one per cent sample of all dentists in continental United States. Data were collected through personal interviews with dentists in 201 localities in the summer of 1957 by the staff of the National Opinion Research Center. These sessions averaged an hour and a half each, and information was collected on a variety of dental topics. Eighty-seven per cent of the target sample completed interviews.

The specific questions on formal education read: (1) "Have you had any formal *graduate* courses or any *hospital* training in a *dental* specialty since you graduated from dental school?" (2) "Since you graduated from dental school, have you taken any short refresher

courses or continuation courses; if so, how many?" Dentists who had taken at least one refresher or continuation course, were then asked about their most recent one: A) "What general subject was it on?"; B) "What institution or group gave it?"; C) "When (what year) did you take it?"

Dentists were also asked about the ways they used to "keep up with new things in the field of dentistry."

#### FORMAL TRAINING AFTER DENTAL SCHOOL

##### *I—Graduate or Hospital Training*

Twenty-nine per cent of the dentists in the sample had taken graduate or hospital training courses since graduating from dental school. Among these, 43 per cent had taken courses in oral surgery; 19 per cent in orthodontics; 13 per cent in prosthodontics; 9 per cent in pedodontics; 9 per cent in periodontics; 5 per cent in oral pathology; and 2 per cent in public health.

As might be expected, these graduate courses were taken by relatively few general practitioners. About one-fifth of the general practitioners had taken such courses, while about three-fourths of those in specialty or limited practices had taken them. Any formal training taken after graduation for the majority of general dentists, then, was probably through refresher courses or not at all.

##### *II—Short Refresher Courses*

As of 1957, about half (49 per cent) of all dentists interviewed had taken two or more refresher courses; 14 per cent had taken only one course; and 37 per cent reported that they had taken no such courses.

###### *A) How recently did dentists take refresher courses?*

About one-fifth had taken their most recent course in the first six months of 1957; 25 per cent in 1956; 11 per cent in 1955; and 45 per cent had taken their most recent course in 1954 or earlier. (Table I)

These proportions do not tell how many dentists took courses in a given year, since they refer to each dentist's most recent course, whenever taken. We know that course takers are likely to be "repeaters" and that some of those taking a course in 1957 also took one in 1956.

However, if we double the figure for the first six months of 1957,

we may roughly estimate that in a given year, perhaps as many as 40 per cent of dentists took refresher courses. This estimate, as well as the attendance figures on which it is based, is higher than many educators might have believed. It should be emphasized that short courses of various kinds and sponsors, in addition to those taken at dental schools, are included.

TABLE I

<i>Year</i>	<i>Recency of Refresher Course %</i>
1957 .....	19
1956 .....	25
1955 .....	11
1950-1954 .....	27
1945-1949 .....	8
1940-1944 .....	5
1930-1939 .....	4
1920-1929 .....	1
Prior to 1920 .....	*
Total .....	100%
Number of Dentists Taking Courses .....	(454)

B) *What was the general subject of the dentist's most recent course?*

Prosthodontics was the most popular course subject, having been taken by 29 per cent of the dentists. Oral surgery with 13 per cent and general dentistry subjects (such as root canal therapy and mouth rehabilitation), also with 13 per cent, were next in numbers of dentists taking them. Courses pertaining to allied techniques (such as oral anesthesia, nerve blocking, X-ray, cephalometrics, hypnosis, and radiology), were taken by 11 per cent. These areas together accounted for two-thirds of the dentists taking courses. The remaining 34 per cent of dentists took their most recent courses in several other subjects. (Table II)

As might be expected from the geographic dispersion of students, and the variety of sponsors, there was considerable variety in the subjects taken in refreshers.

The year of individual dentists' last course was spread over several decades. It is difficult to make a direct inference about trends in the



subject matter of short courses over time because the data is for this last course only. By looking at the subjects taken in 1956-1957, however, we can at least see what courses were attended by those taking them most recently. For these years the most popular course was prosthodontics; general dentistry and orthodontics were the next most popular. (Table II) The general picture for 1956-1957 is quite similar to the forty-odd years covered by dentists' course taking.

TABLE II  
SUBJECT OF MOST RECENT REFRESHER COURSE

<i>Subject</i>	<i>Whenever Taken</i> %	<i>1956-1957</i> %
<i>Dental Specialty</i>		
Prosthodontics .....	28	23
Oral Surgery; Endodontics .....	14	10
Periodontics .....	10	13
Orthodontics .....	9	14
Pedodontics .....	5	5
<i>Other Dental Specialty: Oral pathology, public health</i> .....	2	1
<i>General Dentistry</i> .....	13	14
<i>Allied Techniques</i> .....	11	12
<i>Dental Techniques: High speed, air drilling, medicines used in dentistry, washed field techniques</i> .....	4	5
<i>Finance; Office Management</i> .....	3	3
<i>Other: Nutrition, Chemistry</i> .....	1	1
Total .....	100%	101%
Number of Dentists Taking Courses .....	(449)	(195)

C) *What institution or group gave refresher courses?*

Over half of the dentists (54 per cent) said that they had taken courses at a dental or medical school; 22 per cent had gone to courses sponsored by a dental society; 7 per cent to courses given by unidentified individuals; 6 per cent to courses given by miscellaneous groups; 5 per cent to courses sponsored by commercial organizations; 3 per cent to courses given by hospitals, dispensaries, or clinics; and 2 per cent to courses under the joint sponsorship of a dental association and a hospital, or of an association and a school.

Variations were also found in the places where dentists took their courses, by the subjects taken. For almost all subjects, the dental school was the source for the majority of dentists. Thus, three-fourths

of dentists listing a course in orthodontics, and two thirds of those listing oral surgery, had taken their course at a school. On the other hand, only 41 per cent of those listing prosthodontics (the most popular of all courses), took it at a school. For the prosthodontics courses, the dental society loomed comparatively large, with 30 per cent taking their courses there. (Table III)

A look at the sponsorship of courses taken in 1956-1957 gives a notion of the currently most popular source of instruction. Dental or

TABLE III  
PLACES VARIOUS COURSES WERE TAKEN

<i>Subject</i>									
<i>Institutions</i>	ORAL SURGERY	ORTHODONTICS	PEDODONTICS	PERIODONTICS	PROSTHODONTICS	GENERAL DENTISTRY	DENTAL TECHNIQUES	ALLIED TECHNIQUES	FINANCE, OFFICE MANAGEMENT
Dental/Medical School	67	74	65	50	41	55	65	55	27
Dental Assoc.	12	12	17	34	30	25	20	17	9
Miscellaneous Groups	7	2	—	5	4	9	15	4	36
Commercial Organizations	2	—	—	—	12	—	—	4	18
Unidentified Individuals	3	12	—	2	10	5	—	13	9
Hospital, Clinic, Dispensary	10	—	4	9	1	2	—	2	—
Joint Sponsorship	—	—	9	—	1	4	—	2	—
City, State, Fed. Public Health Off.	—	—	4	—	1	—	—	—	—
Other	—	—	—	—	—	—	—	2	—
Total % Number of Dentists Taking Courses	101 (60)	100 (42)	99 (23)	100 (44)	100 (128)	100 (56)	100 (20)	99 (47)	99 (11)

medical schools were the most popular, with dental societies second. (Table IV)

The groups sponsoring courses had different ranges of offerings. If we look at Table V, we note the distribution of courses taken at

TABLE IV  
SPONSORSHIP OF MOST RECENT COURSE

<i>Institution or Group</i>	<i>Whenever Taken</i> %	<i>1956-1957</i> %
Dental or medical school .....	54	53
Dental association, general or specialty dental society .....	22	30
Miscellaneous groups .....	7	6
Commercial organizations .....	5	4
Unidentified individuals .....	7	3
Hospital, dispensary, or clinic .....	3	2
Joint sponsorship of dental assoc. and hospital or assoc. and school .....	2	2
City, state, or federal public health office .....	1	—
Other .....	—	—
Total .....	101%	100%
Number of Dentists Taking Courses .....	(443)	(195)

each source. The schools gave the broadest range of subjects. Commercial courses were much more limited, with three-fourths of the dentists taking courses from such sources in a single subject, prosthodontics.

#### HOW DO DENTISTS EVALUATE REFRESHER COURSES FOR KEEPING UP?

Practitioners were asked: "What are the most important ways in which you keep up with new things in the field of dentistry?" Three-fourths of the dentists in the survey felt that attending meetings and conventions was their most effective method of keeping up. Three-fourths also named professional journals and literature as an important way. Postgraduate or refresher courses were mentioned as most important by one-fourth of the dentists. No other means was mentioned as important by as much as a tenth of the dentists. (Table VI)

We have already mentioned the preference of dental educators for formal courses. The relatively low evaluation of these courses by practitioners suggests a difference of viewpoint between teachers

TABLE V  
PLACES VARIOUS COURSES WERE TAKEN

<i>Subject</i>	<i>Institution</i>								
	DENTAL/MEDICAL SCHOOLS	DENTAL ASSOCIATIONS	MISCELLANEOUS GROUPS	COMMERCIAL ORGANIZATIONS	UNIDENTIFIED INDIVIDUALS	HOSPITAL, DISPENSARY OR CLINIC	JOINT SPONSORSHIP	CITY, STATE, FEDERAL PUBLIC HEALTH OFFICE	OTHER
<i>Dental Specialty:</i>									
Prosthodontics	21	40	19	76	42	7	—	—	—
Oral Surgery-Endodontics	16	7	15	5	6	40	—	—	—
Periodontics	9	15	7	—	3	27	—	—	—
Orthodontics	13	5	4	—	16	—	—	—	—
Pedodontics	6	4	—	—	—	7	—	—	—
<i>Other Dental Specialty</i>	3	—	—	—	—	—	—	—	—
<i>General Dentistry</i>	13	14	19	—	10	7	—	—	—
<i>Allied Tech.</i>	11	8	7	10	19	7	—	—	—
<i>Dental Tech.</i>	5	4	11	—	—	—	—	—	—
<i>Finance, Office Manag.</i>	1	1	15	10	3	—	—	—	—
<i>Other</i>	1	1	4	—	—	7	—	—	—
Total Number of Dentists Taking Courses	99 243	99 98	101 27	101 21	99 31	102 15	— *	— *	— *

\* Less than 10 respondents.

and practitioners. One reason for this may be the sheer unavailability of university courses to dentists away from urban centers and dental schools. Another reason may be in the small effort that most practitioners seem willing to make in pursuing learning. It is no secret that attending meetings is less demanding than attending a refresher course or a study club. Reading and self-study are also heavily endorsed by practitioners, but seem to be undertaken in very small amounts by the average dentist. Data from a recent study of

Minnesota dentists showed that about two-thirds of the dentists usually spent an hour per week reading dental journals. A study of Chicago dentists showed half giving only an hour per week.\*

TABLE VI  
MOST IMPORTANT WAYS IN KEEPING UP WITH NEW THINGS  
IN THE FIELD OF DENTISTRY

<i>Ways</i>	<i>%</i>
Attend meetings, conventions, table clinics at meetings .....	75
Reading professional journals, literature, textbooks .....	74
Postgraduate or refresher courses, lectures, seminars .....	24
Study clubs or study groups .....	9
"Reading," TV, fraternities, participation in dental programs, etc. ....	9
Commercial source .....	6
Informal contact with other dentists .....	5
Dental or medical affiliations .....	3
Hospital or clinic affiliations .....	1
Learn from own practice; from own work .....	—
Total .....	206%*
Number of Dentists .....	(758)

\* Percentages add to over a hundred because of multiple answers.

#### SUMMARY

These data pose several hard problems for continuing education. First of all, about one-third of practitioners have never participated in any formal courses after graduation from dental school. For almost a fifth of those dentists who have participated, it has been seven years or longer since their last course. There exists, then, a large mass of dentists who are not keeping up through the means that seem most adequate for learning.

Secondly, there appears to be a great imbalance in what subjects were taken. If the recent strides in dental research have been made in all dental areas, there is a preponderance of courses taken in prosthodontics. Twice as many dentists had enrolled in prosthodontics than in any other one area.

The wide variation in attendance also indicates the hit or miss nature of continuing education. Contrary to improvements in the training of dental students, improvements in continuing education

\* See *The Fortnightly Review* (Chicago Dental Society) 48:14-6, Dec. 1, 1964.



as now organized may not uniformly raise the level of dental practice. Dentists are selective in what they are willing to learn, and vary greatly in how much effort they put into it. Even at its maximum utilization, continuing education will be a limited educational force.

The dispersion of courses and sponsors points up another lack of organization—in the planning of continuing education on a profession-wide scale. There appears to be a lack of correspondence with the objective educational needs of the profession. Perhaps continuing education too often follows the market rather than leads it.

Doing something about the underlying problems which these facts suggest requires more information on the educational needs and desires of individual dentists as well as about their course taking. A second study now underway will attempt to point out some of the factors and conditions associated with whether a dentist takes refresher courses, and how frequently he takes them.

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*In 1963 the College, aided by a grant from the National Institute of Dental Research, initiated and established a training program for researchers in dentistry. The third session is described. Participating institutions have been the Airlie Foundation, Jackson Memorial Laboratory, Carnegie Institution of Washington, University of Minnesota, University of Arizona, and the Rockefeller Institute.*

## The Institute for Advanced Education In Dental Research

THOMAS J. HILL, D.D.S., D.Sc. (Hon.), LL.D. (Hon.)

THE American College of Dentists has now completed its second year as sponsor of the Institute for Advanced Education in Dental Research. The College is aided in this activity by a grant from the National Institute of Dental Research. The grant is to the American College of Dentists; the secretary of the College, Dr. O. W. Brandhorst, is the responsible officer. To aid the secretary a special committee of consultants has been appointed to plan and administer the sessions. The committee consists of Drs. Wallace D. Armstrong, James A. English, Thomas J. Hill, David B. Scott and Samuel Pruzansky. Dr. Hill acts as secretary to the committee. They report to the Committee on Research of the College.

For the present the Institute is directing its attention to two broad fields of research. One field is "growth and development" with varying emphasis from year to year, including skeletal and facial growth,

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Dr. Hill has had a long career as a teacher of therapeutics and pathology at Western Reserve University, retiring in 1955. He served as a member of the Council on Dental Therapeutics of the American Dental Association from 1931 to 1954, and as chairman 1947-1954. He also served as chairman of the Council on Dental Research of the ADA, 1955-1960. He is a past-president of the American College of Dentists (1959).

genetics, embryology, neurophysiology, aging, and related subjects. The second field is "physical-biology" with varying emphasis, including electronmicroscopy, autoradiography, radioactive and tracer substances, and a broad concept of biochemistry.

The purpose of the Institute is to provide an opportunity for bringing promising investigators in dentistry into intimate contact with senior scientists in basic and fundamental research who are making significant contributions in their fields. By making this contact sufficiently long and informal, a broader and deeper understanding should develop concerning dentistry's problems and fruitful ways to attack them.

The attainment of intimate contact between young investigators and senior scientists is usually limited by the daily life of the university or dental school, and is not obtained by the brief and formal contacts possible within the framework of scientific meetings and specialized symposia. The Institute provides a unique way of familiarizing young investigators not only with some of the more promising newer techniques for research in dentistry but, more importantly, with the methods of thought and work of experienced men who have contributed to the creation of these techniques and to their application. It is expected that the junior investigators will, after the period of association, apply new concepts and methodologies to their own research and thereby enhance and broaden the direction of their own individual endeavors.

Each year the Institute will place emphasis on different phases of the selected fields. Consequently, the subject content of the sessions will change and consideration will be given to different techniques, methodologies, and their application. To implement this, different institutions or laboratories will be used because of their known strength and interest in the areas selected. For this changing emphasis some change and/or additions in the mentors will provide men of particular competence.

The Institute will hold sessions each year of not less than three nor more than four weeks. The time will be divided into two sessions of two weeks each. During this time the two groups will meet together for half of the allotted time in an effort to broaden the concept and to familiarize the attendants with the methodologies and techniques of the other field and their related or overlapping application. During the remainder of the sessions the two groups will

meet separately to devote their time to techniques of special interest to their own group. The attendants are encouraged to discuss their own research and any problems that may be involved so that they have the benefit of the suggestions of other attendants, and the mature experience and judgment of the mentors. The informality of these sessions and the prolonged length of contact between the attendants and mentors should contribute much to the free and easy exchange of information.

In the past two years the Growth and Development Group has held some sessions at the Jackson Memorial Laboratory for Genetics at Bar Harbor, Maine, and some at the Carnegie Institution of Washington Department of Embryology at Baltimore. The mentors have been Drs. Samuel Pruzansky, Milton W. Krogman, and Edward E. Hunt. They have had the assistance of Drs. James Bosma and Charles Jerge. The Physical-biology Group have used the laboratories of the University of Minnesota and the University of Arizona. The mentors have been Drs. Wallace D. Armstrong and Ralph W. G. Wyckoff. They have had the assistance of Drs. Leon Singer and David B. Scott.

The attendants at the Institute are selected not only on their record of accomplishments and promise for the future, but also upon their ability to add to the dialogue that comprises the curriculum. Further, the attendants are selected to provide the greatest variety of disciplinary representation pertinent to the subjects. Five or six men are selected from each field and from applications made to the American College of Dentists. Special effort is made to select investigators whose work is closely allied to the emphasis in the area under consideration. The Institute pays the attendants for their travel expense and a stipend based upon the cost of living.

This Institute sponsored by the College is proving to be highly successful and is an activity in which the College and its Fellows may have great gratification. The College is thus demonstrating further its concern with the promotion of research, continuing education, and the concept of service that will ultimately benefit the public and the profession.

The Institute makes the following announcement for the 1965 Sessions. The Growth and Development Group will deal with embryogenesis, postnatal development, experimental biology, teratology, and genetics. The mentors will be Drs. Samuel Pruzansky and

Edward E. Hunt. They will have the collaboration of the staff of the Rockefeller Institute and others. The duration of the session will be three weeks, May 3-14, and October 18-22. The Physical-biology Group will give consideration to concepts and experimental methods in modern biochemistry with special reference to protein polysaccharides. The mentors will be Drs. D. W. Wooley and Dominic Dziewiatkowski of the Rockefeller Institute. The length of the session will be three weeks and the same dates as above.

Investigators interested in attending the 1965 Sessions should write: Dr. Otto W. Brandhorst, Secretary, American College of Dentists, 4236 Lindell Blvd., St. Louis, Mo. 63108. Those interested should include their curriculum vitae and their special field of research with a list of their publications. Efforts will be made to select men whose fields of interest are closely allied with the emphasis of the current year of study.

#### A NOTE TO READERS

In this issue of the JOURNAL we have published some of the papers that were read at the San Francisco meeting of the College. There are still additional papers, read at Nob Hill, that will appear in the April number. The minutes and the proceedings of the Convocation will be included.

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You might notice, on page 53, "Correspondence and Comment." Actually, this is a "letter to the editor" department. Why don't you write us? What are *your* comments? Let us start talking about things—the College, the world, dentistry, you! What do you have to say? Say it. Send it to us.



# How Persons Can Be Interested In Dentistry as a Career

MILTON B. WALLACK, D.D.S.

It is paradoxical in a world which is becoming more and more health conscious, and is discovering cures for many perplexing diseases, that there are relatively fewer people entering dentistry in proportion to the increasing need for oral health care. This phenomenon occurs not only as a result of augmented public attention upon the desirability of proper oral health, but also because the proportionate increase in population is greater than the number of dental school graduates.

Recent studies have shown a good ratio to be one dentist to approximately every 1,000 members of the community. At the present time, however, there is only one active dentist for every 1900 persons. If the current trend in population growth continues, 134,000 dentists will be needed in 1975, just to maintain the existing ratio. If the number of dental graduates continues at the present rate, there will be only 118,000 practicing dentists by that time (1).

Because of this circumstance, it has become necessary to find ways and means of interesting more capable young men, as well as young women, in dentistry. The approach to the problem must be vigorous, yet subtle and tactful, as young people may rebel against too much obvious coercion. An honest, sincere, and interesting attack must be offered.

It is advantageous to stimulate a passive, if not active, interest in dentistry at a fairly young age. This enhancement can be done most effectively through the child's early associations with his own dentist; for in doing his job, a dentist should explain the various facets of his treatment to his patient. What child would not be interested in the strange workings of the fascinating dental equipment, or the miracle of seeing silver restorations appear like magic as the result of mixing some liquid with a little powder?

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Class of 1964, School of Dentistry Temple University.

This essay was judged second place in the 1964 Writing Award Competition of the American College of Dentists. A plaque and \$100.00 were given to Dr. Wallack.

The dentist's task of recruitment extends even beyond the walls of his office. Visits to both elementary and high schools can aid in influencing young persons toward careers in dentistry. Then, too, the dentists themselves may hold workshops to stimulate interest in the students, and to educate the teachers in the fundamentals of dental health and in the value of performing dental service. These advantages may be accomplished in an interesting manner with diagrams, charts, models, slides, and films. Education of the teachers may be the most essential aspect of the workshop program, for by continuous contact with many young men and women, the teacher may serve as an invaluable aid to spurring interest in dentistry.

An even more encompassing program of dental education can be presented through assemblies for teachers, students, and even parents. Parent-Teacher Organizations are always seeking informative and beneficial programs, and parents can play a significant role in the young person's choice of a profession. Therefore, if the parents can be convinced of the merits of a dental career, they, too, can become important adjuncts in influencing the student to enter dentistry. Other community organizations such as Rotary Clubs, Kiwanis Clubs, fraternal associations, and church groups could sponsor vocational clinics at which members of various professions would speak and answer questions for the interested youth of the community. This type of open forum is beneficial because it reaches the students directly—and on a voluntary basis. Additionally, the dentists in the community could have their names made available to any student who is interested in ascertaining information about careers in dentistry. A high school and college guidance counselor would welcome this assistance.

High school science fairs offer an excellent means to establish a young person's association with dentistry (2). Presentations related to dentistry can stimulate interest not only for the students who have done the research but also for those who have observed the finished project. Dental associations could offer prizes to deserving exhibits pertaining to dentistry, thus fostering more widespread knowledge among young persons.

In addition, the American Dental Association and other interested organizations could sponsor essay contests for high school students on "Why Dentistry as a Profession?" Scholarship prizes could be an incentive for students to do research and, therefore, increase their understanding of the role of dentistry in society today.

Inviting high school and college students to work in dental schools during their Summer vacations is another way by which to arouse interest among young persons. They could compile statistics or organize records. Perhaps this employment could be extended to include helping junior and senior dental students in diagnostic charting of the oral cavity. Youngsters with superior grammatic ability could aid in editing manuscripts and manuals; while those with artistic capability could make charts and study models. Assisting in laboratory research is still another facet in the profession which the competent youngster could manage. All of these would serve to activate the alert young students' awareness of the scope of dentistry (3).

Contact with young people may also be established by conducting guided tours of dental schools for high school and college groups (3). Young students may thus be introduced to the wide range of dental studies—from the freshman anatomy laboratory to clinical activities of an upper classman; from the course in dental history to discussions of ethical and moral responsibilities, which are highly significant aspects of the profession. These tours should also make evident the dynamic approach of the research taking place in the graduate laboratories. By these exposures to dentistry, the observant young student will discover how his individual talents can find a valuable and useful place in the profession. He will be made to realize how latent abilities can be nurtured through education and experience.

Still further contact with students on the college level can be gained through open forums in which various aspects of dentistry may be presented by groups of interested dentists—facets such as “research, teaching, specialties, military and public health service and the satisfactions of general practice (4).”

Alumni can play a significant role in motivating both high school and college undergraduates in the pursuit of a dental career. Various methods, such as lectures and symposia, have been attempted. One particularly effective way to create interest is a program in which a panel of alumni appears before undergraduates to talk and respond to questions. This panel may be composed of a senior dental student, a dental practitioner of about five years, a specialist in practice about ten years, and a dentist with approximately twenty-five years of experience; all of whom have something different to offer to the students of their alma mater (5).

A different facet of the alumni-student relation is a big-brother program, whereby the practicing dentist invites certain students to

accompany him to dental conventions and exhibits. This type of experience will tend to acquaint the young undergraduate further with the different aspects of dentistry.

Of course, one cannot overlook the persuasive power of national magazines, newspapers, and pamphlets. Articles, editorials, letters to the editor, and even pictorial essays such as "*Life* Visits a Dental School" may be effective in reaching a wide range of persons. In addition, radio and television can serve to inform the public and, therefore, can interest young persons in dentistry, especially through educational programming. Moreover, it is not beyond the realm of possibility to utilize programs of a seemingly entertaining nature to encourage young persons toward careers in dentistry. Also entertaining, as well as informative, are films which are now made available through the American Dental Association.

All of these suggestions concern methods by which interest in dentistry as a career might be stimulated in young persons. However, attention must also be given to specific details they should be told and to observations they should make. It should be made evident, for instance, that dentistry is not merely a mechanical vocation; instead, it is a vital biologic science, with a multitude of implications. A dentist is concerned with the health and welfare of the community, not only in his role as a dentist but also as a responsible and respected leader in community affairs. His capacity as a dentist encompasses far more than most lay persons expect. As well as relieving physical discomfort and pain, the dentist has an important role in relieving emotional and psychologic discontent through esthetic improvements or through the correction of speech impediments. He is, of course, most essential in enhancing oral function, which may be considered the cornerstone of the digestive system—a system essential to health and well-being.

Presentations of case histories can present the various aspects of dentistry. Recognition of oral cancer, for example, can be shown to be an essential phase of dentistry. Other diseases which can manifest themselves in the oral cavity and surrounding area, and thus fall into the province of dentistry for recognition are blood dyscrasias, diabetes, measles, mumps, nutritional disturbances, syphilis, and tuberculosis. Even migrane headaches can be a dental problem concerned with the temporomandibular joint. Correction of cleft palate conditions through prosthetic devices is also becoming an important

aspect of dentistry. The dentist's service thus deals with the importance of proper care and function of the oral cavity in relation to systemic well-being and general health. One cannot overlook the necessary biologic care of patients' gingivae, nor the mechanical reconstructions of the coronal portions of damaged teeth.

The observer can thus be shown the many implications inherent in the role of a dentist; for a dentist is a public servant, a reliever of pain, a scientist, a researcher, a psychiatrist, a cosmetician, a student, a teacher, and a trusted friend and confidant. In addition, a young person seeking a career should be made aware of some of the personal rewards which dentistry may offer—rewards such as the satisfaction of serving humanity, the achievement of prestige and recognition, the excitement of doing interesting and challenging work (6), and the chance to develop personal initiative through self-employment, as well as the benefits of financial security (7).

It can be pointed out further that dentistry is a profession rich in tradition, and that it has contributed knowledge to all areas of health science. It had its origin in ancient Egypt and has been striving for the maintenance of health and oral function since that time. Notable among dentistry's contributions are those in anesthesia. Several dentists, especially Horace Wells and William T. G. Morton, are remembered for their innovations in painless surgical procedures. This discovery alleviated the problem of pain accompanying surgery, and thus made extensive surgical procedures more tolerable. More recently, dentistry has helped to promote advances in furthering the concept of preventive health care. A noteworthy example of this enhancement are the studies of the U. S. Public Health Service which have led to the use of fluoridated water.

Awareness of these facts and the carrying out of the suggestions indicated in this essay may perhaps serve to interest many more young persons in careers in dentistry. It would be unrealistic, however, to ignore some of the other major difficulties in attracting young persons to the dental profession. One problem concerns the high cost of a dental education. The dental profession must therefore assume its responsibility to make the study of dentistry available to all, regardless of financial means. This benefit can be achieved through the creation of many more scholarship and loan programs. These may be enacted through greater state and federal aid as well as by private contributions (1).

A centrally-located, tuition-free dental school and research center



for exceptional students who lack sufficient means to support their own education, is another possibility. Sponsorship of this school should be achieved through the combined efforts of the American Dental Association and the federal government. In the proposed Aid to Education Bill, allocations are to be made for the expansion of educational facilities on the undergraduate, graduate, and professional levels. It is not entirely unfeasible, therefore, to expect the dental profession to reap some benefits from this bill or others like it. Further financial aid could be obtained from the individual state by having it give specified amounts of money for each student accepted to the school from that state.

Another possibility for exceptional students is a five or six year plan for dental education. It would entail having dental schools cooperate with undergraduate institutions, just as the Jefferson Medical College in Philadelphia associates with the Pennsylvania State University. This plan would provide the able student with the chance to obtain the equivalent of four years of liberal arts education as well as the necessary four years of dental education, in a considerably reduced time. The program could be accomplished by continuous schooling, including Summers, throughout the five or six years. The results would be threefold: (1) it would give the graduate more years of productivity by reducing the number of years of education; (2) it would provide him with more time and money to devote to postgraduate study, if he were so inclined; and (3) it would reduce considerably the basic cost of a professional education.

Whereas lack of sufficient funds may discourage some from entering dental school, others may be discouraged because they feel it is too difficult to gain admittance because of the necessarily limited acceptances by the dental schools. This feeling is indeed unfortunate; yet only partially true. Because of population distribution and geographic location of the dental schools, one school may have as many as five to ten applicants for each available place in the freshman class, while others not enough applicants to fill the class. Better use of a recently established central agency could provide a record of the number of applicants to the various schools. By referring to this agency, an inquiring young man or woman could learn where his chances of gaining admission are best. This would tend to balance the number of applicants to the different schools. Through the proper use of this central agency, the profession would, therefore gain rather than lose prospective dental applicants (8).

A further task of this central agency should be to review the records of applicants placed on waiting lists by the various schools. This can be done by a special committee composed of people approved for the duty by all of the dental schools. Students who are deemed to be worthy applicants by this committee either could be recommended to another school or could be entered on a list which may then be sent to dental schools with vacancies. This procedure would tend to equalize the burden of educating young people interested in dentistry as well as to enhance individual chances of gaining admittance to dental school.

Finally, and perhaps most important in influencing the young person to become a member of the dental profession is the consistent good example of the dedicated and devoted dentist who, in his endeavors, achieves satisfaction and reward—satisfaction that comes from restoring normal function to diseased, injured, or defective parts of the oral cavity; satisfaction in discovering physiologic disorders early enough to deter profound future disability; satisfaction in relieving the emotional and psychological problems of his patient; and satisfaction in working for the betterment of the community of man.

The dentist who shows devotion to his task, excellence in his work, and sincerity in his attitude will be the best incentive to young persons seeking careers. As dentists, we should always convey the deep feelings of dedication, pride, and reverence which we feel toward our profession.

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## Correspondence and Comment

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CONCERNING THE TERM "SOCIAL DENTISTRY." J. A. Salzmann, D.D.S., 654 Madison Avenue, New York, N. Y.

On pages 196-198 of the October, 1964, issue of the JOURNAL OF THE AMERICAN COLLEGE OF DENTISTS you published an editorial by Dr. Walter J. Pelton on "Teaching 'Social Dentistry.'" I am surprised to find that a man with a public health background such as Dr. Pelton has would use the term "social dentistry" when he is speaking about public health dentistry. "Social dentistry" in Europe is a term used for government-supported dentistry. While it is not so advertised, it implies inferior dentistry. In the specialty of orthodontics with which I am better acquainted, "social dentistry" implies limited if not inferior dental service. A brochure published in Great Britain on "The Scope and Limitations of Orthodontic Treatment" under the National Health Insurance Program contains many examples of the limitations of orthodontic service under government auspices.

Regardless of who pays for it and how dental care is paid for, the patient is entitled to the best service, for which American dentistry is recognized throughout the world. I am not one of those who is afraid of the term

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A department under this heading was initiated in Volume 1 (1934) of the JOURNAL by William J. Gies, then the editor. It is continued occasionally as circumstances permit.

Readers and members of the American College of Dentists are invited to submit discussion for publication; letters to the Editor are also used. Owing to limitations of space, contributions for this department should be brief and direct. (T.McB.)

"social dentistry," nor even of "socialized dentistry," but I do feel that we should keep the record straight. There should be no compromise of quality for the sake of quantity with lessened benefit to all concerned.

NEW FLUORIDATION RESOLUTION APPROVED BY FDI. Gerald H. Leatherman, D.M.D., F.D.S.R.C.S., 35 Devonshire Place, London, England.

The General Assembly of the Federation Dentaire Internationale, meeting at San Francisco in November of 1964, adopted the following resolution reaffirming the Federation's policy on fluoridation:

*Whereas*, dental caries is a disease of major proportion throughout the world, causing pain, disfigurement and impairment to health; and

*Whereas*, the scientific evidence supporting the safety, effectiveness and practicality of fluoridating public water supplies in order to reduce the incidence of dental caries has been considered and accepted by an Expert Committee convened by the World Health Organization, by governments, and by scientific and professional organizations throughout the world, and

*Whereas*, continuing study and observation over the past thirty years have established fluoridation of communal water supplies as the most efficacious and inexpensive means for preventing dental caries and for improving dental health throughout life, be it therefore

*Resolved*, that the fluoridation of public water supplies be commended to all public authorities as the most effective public health measure presently available for reducing safely and

economically the incidence of dental caries.

**"DOCTORS AND DENTISTS."**

Charles F. Bodecker, D.D.S., 30 East 42nd Street, New York, N. Y. 10017.

For many years I have been protesting against the almost universal error that is made in common speech and in public utterances when reference is made to medical practitioners and dental practitioners as "doctors and dentists."

In the May 1949 issue of *The New York State Dental Journal* I wrote an editorial entitled "The Title of Doctor" in which I pointed out the erroneous apposition of these two words.

The word "doctor" is derived from the Latin and was used by the Romans to designate a teacher or instructor. In the twelfth century it began to be used as a title of honor for men of great learning. It was first employed as an academic title at the University of Bologna, Italy. In modern popular usage it is restricted to medical practitioners who hold the degree of Doctor of Medicine, to dentists having the degree of Doctor of Dental Surgery or Doctor of Dental Medicine, to clergymen who are Doctors of Divinity, and to graduates and scientists who are Doctors of Philosophy. Curiously enough, in England the surgeon is not called a doctor, the title being confined to a physician.

The term "doctor" has thus become a title of learning. The term "dentist" is not a title of learning but the description of a particular profession. The correct apposite for the medical profession is that of a physician. When we say "doctor and dentist" we are using a title of learning together with a word describing a particular profession.

True it is, when we address a dentist we call him doctor and when we address a physician we also call him doctor. To put the two words, doctor and dentist together, however, is simply silly because all dentists are doctors.

To the man who has chosen to devote his life to medicine or dentistry it is of little importance what title the public may accord him, or that the public accords the same title to both. But it is of importance that in distinguishing between the two vocations the correct terminology should be employed. There is no distinction between a doctor and a dentist. The distinction is between a physician and a dentist. Both are doctors.

I am glad to note that some progress is being made. The United States Public Health Service is to be complimented for using in its publications the proper terminology, "physician and dentist" instead of "doctor and dentist." And I am glad that the American College of Dentists has always taken the same stand.

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Do you want to say something; to speak out; to comment?  
Do so. Write us. We will print it. This department is a forum.

[McB.]

# The Image of Dentistry—Workshop

At Atlantic City, in 1963, the American College of Dentists initiated a program that was to have a profound impact on the development of the dental profession. The theme of that meeting was: What is the image of dentistry; how do people look at the profession. A college educator, a newspaper editor, and a public health worker examined at length and with critical eyes, our profession. They attempted to show just what *was* our public profile. It was a bleak portrait.

This month, January 1965, at St. Louis, the College took the second step. A workshop on ways and means to enhance the image of dentistry was held. This was a project of the College Committee on Social Characteristics.

The general discussion considered: changing the dentist's image of his profession; how to enhance and measure that image; how to improve the interprofessional view of the profession; and the environmental reorganization of dental practice. The social changes in Canada were stressed, in the light of what they might mean to us in the United States. And, "What are they saying about dentistry?"—the public, the Great Society—was given considerable attention.

Almost a hundred persons participated in the Workshop (January 17-20)—general practitioners, specialists, college administrators, public health workers, state boards of examiners, and representatives of the American Dental Association.

The formal papers will appear in a later issue of the JOURNAL. The summation of the six study groups will be condensed. The program, in part, follows:

## WELCOME

Harry Lyons, President, American College of Dentists, Richmond.

## GREETINGS

LeRoy R. Boling, Dean, Washington University School of Dentistry, St. Louis.

Stephen P. Forrest, Dean, St. Louis University of Dentistry, St. Louis.

## ORIENTATION

Kenneth A. Easlick, Chairman, Committee on Social Characteristics, American College of Dentists, Ann Arbor, Mich.

## ADDRESSES

"Changing the Dentist's Image of His Own Profession"

Alvin L. Morris, Dean, University of Kentucky, College of Dentistry, Lexington.

"Enhancing the Image of Dentistry"

Harold Hillenbrand, Secretary, American Dental Association, Chicago.

"Developing Methods for Improving the Interprofessional Image of Dentistry"

Russell S. Poor, Director, Division of Nuclear Education and Training, U. S. Atomic Energy Commission, Washington.

"Instituting an Environmental Re-Organization of Dental Practice"

Carlton H. Williams, San Diego.

"The Lessons That Social Changes Taught Canadians"

Donald W. Gullett, Retiring Secretary, Canadian Dental Association, Toronto, Canada.

"What Are They Saying About Dentistry?"

Nathan Kohn, N.K. & Associates, St. Louis.

"Methods of Measuring the Image of Dentistry"

Donald J. Galagan, Chief, Division of Dental Public Health and Resources, Public Health Services, Bethesda, Md.

Erwin L. Linn, Ph.D., Acting Chief of Social Studies Branch, Public Health Services, Bethesda, Md.

## SUMMARY

"Where Do We Go From Here?"

Nathan Kohn, N.K. & Associates, St. Louis, Mo.



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

The American College of Dentists, in order to promote the highest ideals of the dental profession, advance the standards and efficiency, develop good human relations and understanding with our patients, and extend the benefits of dental health services to the greatest numbers, declares and adopts the following principles and ideals as ways and means for the attainment of these goals:

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

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

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

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

(e) To urge the development and use of measures for the control and prevention of oral disorders;

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

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

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

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

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

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

